GENERAL REPORT AND ANALYSIS

CHAPTER I.

INTRODUCTION AND GENERAL EXPLANATIONS.

All of the statistics of the Thirteenth Census of mines and quarries are presented in this volume. It contains (1) a general presentation and analysis of the statistics; (2) a presentation of the principal statistics of mines and quarries for the individual states; (3) special reports on certain of the leading mining industries, viz, anthracite and bituminous coal mining, iron mining, and the petroleum and natural gas industry; and (4) eleven general tables which are designed to bring together the more important data in convenient form. These tables are as follows:

Table 1 compares the results of the census of 1909 with those of the special census of mines and quarries of 1902, by industries. It shows for each year the amount expended for salaries and wages, supplies and materials, royalties and rent of mines, and contract work; the value of products; and the primary horsepower used. It also shows the percentage of increase in the amounts paid for salaries and wages, royalties and rent of mines, value of products, and primary horsepower.

Table 2 presents for each state the same data that are shown for the individual industries in Table 1.

Table 3 presents for the United States as a whole, including both producing and nonproducing enterprises, detailed statistics as to capital, expenses of operation and development, persons engaged in mining industries, land controlled, and primary horsepower, by industries.

Table 4 presents similar statistics by states.

Table 5 shows the number of wage earners employed in all enterprises on the 15th day of each month, by industries.

Table 6 presents the same information by states.

Table 7 presents for producing mines, quarries, and wells in the United States as a whole detailed statistics as to capital, expenses of operation and development, value of products, persons engaged in mining industries, land controlled, and primary horsepower, by industries.

Table 8 presents the same information by states.

Tables 9 and 10 present detailed statistics for nonproducing enterprises by industries and states, respectively.

Table 11 shows the number of enterprises in each industry, by states.

Provisions of law.—Those portions of the "Act to provide for the Thirteenth and subsequent decennial censuses," approved July 2, 1909, which refer particularly to the census of mines and quarries are as follows:

The schedule of inquiries relating to * * * mines and quarries shall include the name and location of each establishment; character of organization, whether individual, cooperative, or other form; amount of capital actually invested; number of proprietors, firm members, copartners, stockholders, and officers and the amount of their salaries; number of employees and the amount of their wages; quantity and cost of materials used in mining; amount of miscellaneous expenses; quantity and value of products; time in operation during the census year; character and quantity of power used; and character and number of machines employed.

The census of * * * mines and quarries shall relate to the year ending December thirty-first next preceding the enumeration of population and shall be confined to * * * mines and quarries which were in active operation during all or a portion of that year.

Whenever he shall deem it expedient, the Director of the Census may charge the collection of these statistics upon special agents or upon detailed employees, to be employed without respect to locality.

The form and subdivision of inquiries necessary to secure the information under the foregoing topics shall be determined by the Director of the Census.

And it shall be the duty of every owner, president, treasurer, secretary, director, or other officer or agent of any * * * mining or other establishment of productive industry, whether conducted as a corporation, firm, limited liability company, or by private individuals, when requested by the Director of the Census or by any supervisor, enumerator, special agent, or other employee of the Census Office acting under the instructions of the said Director, to answer completely and correctly to the best of his knowledge all questions on any census schedule applying to such establishment; and any owner, president, secretary, director, or other officer or agent of any * * * mining establishment, or other establishment of productive industry, who under the conditions hereinbefore stated shall refuse or willfully neglect to answer any of these questions, or shall willfully give answers that are false, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding ten thousand dollars, or imprisoned for a period not exceeding one year, or both so fined and imprisoned, at the discretion of the court. * * *

That the information furnished under the provisions of the next preceding section shall be used only for the statistical purposes for which it is supplied. No publication shall be made by the Census Office whereby the data furnished by any particular establishment can be identified, nor shall the Director of the Census permit anyone other than the sworn employees of the Census Office to examine the individual reports.

Cooperation with the Geological Survey.—The statistics of mines and quarries at the Thirteenth Census were collected by the Bureau of the Census in cooperation with the United States Geological Survey, which collects annual statistics of mineral production. The plan of cooperation was embodied in the following agreement between the Bureau of the Census and the United States Geological Survey, approved by the Departments of Commerce and Labor and of the Interior:

CENSUS OF MINES AND QUARRIES.

AGREEMENT FOR COOPERATIVE WORK BETWEEN THE BUREAU OF THE CENSUS AND THE GEOLOGICAL SURVEY.

The act of Congress approved July 2, 1909, making provision for the Thirteenth and subsequent censuses, directs that a census of * * * mines and quarries of the United States shall be taken by the Director of the Census in the year 1910 and every ten years thereafter.

The Geological Survey collects annual statistics of mines, quarries, and mineral products, and for the census year its work will, to some extent, duplicate that of the census. Recognizing the necessity of uniformity in the compilation of the statistics, the elimination of duplicate work, and cooperation as far as possible in the collection of the data required by the two bureaus, the Director of the Census and the Director of the Geological Survey have made this agreement.

(1) The Geological Survey, because of the annual statistical canvass made by it, has in its possession as complete lists of the mineral producers as it is possible to maintain. The lists of names and addresses of all mines and quarries, corrected to the latest date possible, will be furnished to the Bureau of the Census.

(2) The schedules for some sections of the country may be sent to the producers by mail, and the envelopes for such mailing will be addressed at the Bureau of the Census.

(3) The census schedules will be printed so as to include the inquiries relative to the statistics of production required by the Geological Survey, but the portion containing the inquiries in regard to production shall be detachable from the main census schedule. In cases where the Geological Survey requires the value of the product marketed and the Bureau of the Census the value of the product mined arrangements will be made to have both values reported on the schedule.

(4) The letter transmitting the schedules is to be over the joint signatures of the Director of the Census and the Director of the Geological Survey.

(5) The schedules will be returned to the Bureau of the Census, it being understood that some one of responsibility will be employed through whose hands all such schedules will pass and who will see that the portion carrying information relative to production will be detached and transmitted to the Geological Survey for tabulation. Prior to separating the schedules the value of product will be transferred to the census schedule.

(6) If it is decided by the two bureaus that it is better to have all the schedules of mines and quarries collected by enumerators or special agents, it is understood that such enumerators or special agents will be instructed to secure the statistics of production for the Geological Survey with as much care as is exercised in obtaining the information required by the Bureau of the Census. The work of the census field men will not be considered completed until all the information called for by the schedules is obtained. The schedules will be transmitted by the enumerators or special agents to the Bureau of the Census and the same procedure followed as if the returns were made by producers through the mails.

(7) In advance of the actual canvass the two bureaus will agree upon the number of employees who will be engaged in the field. When practicable, these employees will collect the statistics for both manufacturing and mining industries in their respective districts. All of them will act under the supervision of the Bureau of the Census, and the traveling expenses and subsistence of the Survey representatives, when employed in the field on this work, will be paid by the Bureau of the Census. The special agents who will be employed in the western states will be instructed to confer with the representatives of the Survey in charge of its offices at Denver, Colo.; Salt Lake City, Utah; and San Francisco, Cal.

(8) As some of the mineral products reported to the Geological Survey will not be included in the census of mines and quarries, it will be impossible to make the totals of mineral production, as reported by the two bureaus, agree, and no attempt will be made to do so. But the statistics containing details in regard to production will in every instance be tabulated by the Geological Survey and will be transmitted to the Bureau of the Census as soon as completed, and the Bureau of the Census will include these statistics, so far as may be desirable, in its report on mines and quarries.

(9) The period to be covered by the two bureaus will be the calendar year 1909, although reports from operators whose fiscal year differs from the calendar year will be accepted, such fiscal year being the one terminating nearest to December 31, 1909.

In pursuance of this agreement two separate schedules were provided for each mining enterprise: (1) A general schedule for all mines and quarries; (2) a supplemental schedule for each of the principal classes of minerals.

The general schedule for mines and quarries followed substantially the form adopted for the census of manufactures. The additional inquiries on the general schedule for mines and quarries related to the following subjects: The acreage and form of tenure of mineral and other lands (Inquiry 3); the classification of wage earners (Inquiry 5); and development work (Inquiry 10).

The supplemental schedules contained inquiries in relation to quantity and value of products and subjects of a technical nature. These schedules were prepared by the Bureau of the Census in cooperation with the United States Geological Survey and followed substantially the forms used by the Survey in the collection of its annual statistics, with some additions and modifications intended to bring the data into harmony with the general schedule.

The object of the census was to ascertain for each operator or enterprise the value of products, the capital invested, the expenses of operation and development, and the number of persons engaged. The annual statistics of the United States Geological Survey are concerned only with the total quantity and value of each product for each geographic division and state. Where the same mining enterprise produces more than one mineral, the total value of products for that enterprise represents a combination of the values of different minerals, whereas for the purpose of the United States Geological Survey it is essential that the value of each mineral be presented separately. On the other hand, in some instances where the product of a mining enterprise undergoes a process of dressing or reduction before reaching the consumer, the statistics of the United States Geological Survey present the final value of the marketable product, whereas the census statistics present the value of the crude product at the mine or quarry. The schedules used by the United States Geological Survey for the collection of its annual statistics were accordingly adjusted to meet the requirements of both bureaus.

Method of collecting statistics.—The canvass of mines and quarries for the Thirteenth Census was made by special agents appointed especially to collect statistics of manufactures and of mines and quarries; a number of clerks from the permanent force of the Bureau of the Census were also detailed to instruct the temporary special agents and to assist in the canvass. In a few sparsely settled districts, in which the

enterprises were difficult of access, the statistics of mines and quarries were collected by enumerators employed for the census of population and agriculture. Whereas at the special census of mines and quarries in 1902 the field force was under the direction of the United States Geological Survey, at the Thirteenth Census the canvass of mines and quarries was made under the direct supervision of the Bureau of the Census. The fact that the mining census of 1909 was conducted simultaneously with the census of manufactures and population enabled the Bureau of the Census to make a more complete canvass of mines, quarries, and petroleum and gas wells than at the special census of mines and quarries for 1902. For example, at the Thirteenth Census the canvass of placer mines (surface gold mines) secured reports from individual operators for 95 per cent of the total production of that industry, whereas at the preceding special census only 62 per cent of the total value of products was covered by reports from individual operators. Similarly, the present canvass of the lead and zinc producing district, comprising the states of Missouri, Kansas, and Oklahoma, secured reports from individual operators covering 98 per cent of the total production for 1909, whereas at the preceding special census only 49 per cent of the total production for Kansas and 86 per cent of the total production for Missouri were covered by reports from individual operators.

A number of the schedules originally received from field agents and enumerators were, upon examination at the Bureau, found to be defective. Such schedules were returned to them for correction. Errors discovered after the completion of the field work were corrected by correspondence with mine operators. After these corrections, there still remained 423 defective schedules which could not be corrected by correspondence, nearly all of these schedules being received from small enterprises. These reports, representing 1.8 per cent of the total number secured, were accordingly omitted from the general tabulation. Some of the enterprises covered by these schedules, however, furnished complete supplemental schedules, giving the quantity and value of products. These schedules were used by the United States Geological Survey in the compilation of its statistics of the quantity and value of minerals produced.

Territory covered.—The census of mines and quarries, taken in connection with the Thirteenth Census, covered the United States proper, also Alaska, Hawaii, and Porto Rico. This census was the first at which a canvass of mines and quarries was undertaken in Alaska. Reports were secured by agents of the Bureau for enterprises in Alaska, most of which were engaged in gold mining. Notwithstanding the difficulties of the canvass in that sparsely settled territory, with a floating mining population, the reports from individual operators of placer mines covered 78 per cent of the total production of placer gold in Alaska, as estimated by the Director of the Mint, in cooperation with the United States Geological Survey.

Industries and establishments canvassed.—The Thirteenth Census covered all classes of mines, quarries, and petroleum and gas wells that were in operation during any portion of the year 1909. This was the first census at which a general canvass of operators of petroleum and natural gas wells was made by census agents. At the special census of mines and quarries for 1902, the Standard Oil Company supplied most of the information secured regarding this industry—seven schedules from the Standard Oil Company covered 95 per cent of the petroleum wells reported for the United States. The total number of operators from whom complete reports were secured at the present census was 7,793.

The canvass of mines and quarries and petroleum and natural gas wells at the Thirteenth Census covered both producing enterprises and those whose operations were confined to development work. Mines, quarries, or wells that were idle during the entire year 1909 were omitted from the canvass. The following operations were likewise omitted from the canvass: Prospecting, the digging or dredging of sand and gravel for the construction of roads and for building operations, the production of mineral waters, and the operation of small bituminous coal banks producing less than 1,000 tons annually. Where the mineral products are not marketed in their crude condition but are dressed or washed at the mine or quarry, the statistics of mining cover the entire work of obtaining the crude material and its preparation for the market. In compiling the statistics for the natural gas industry the Bureau of the Census used only the reports of producing companies, whereas the United States Geological Survey included in its statistics the reports of distributing companies which purchased their natural gas from producing companies.

Relation between statistics of mines and quarries and of manufactures.—The census of the mining and quarrying industries, including the petroleum and natural gas industries, which are, for convenience, spoken of as mining industries, was taken coincidently with the census of manufactures for 1909. The Twelfth Census did not include an enumeration of mines and quarries, but such an enumeration was made for the year 1902.

In some cases it is impossible to make a sharp distinction between mining and quarrying operations, on the one hand, and manufacturing operations on the other. Both are frequently conducted by the same concern. Strictly speaking, mining and quarrying operations cease as soon as substances have been removed from the earth, and all processes thereafter performed on those substances are in the nature of manufacturing. To attempt to make this distinction rigidly in every case in the census statistics, how-

ever, would involve a very large amount of estimate, and would, moreover, go contrary to the ordinary conceptions of the operators of mines and quarries as to the scope of the mining and quarrying business. The crude products of mines and quarries, after they leave the ground, are almost always subjected to a certain amount of manipulation at the mine or quarry itself. They have to be crushed, separated, washed, burned, calcined, concentrated, cut, polished, or otherwise modified before they are regarded as marketable commodities. Even coal is often broken up and sorted according to size at the mines. All such work is theoretically in the nature of manufacture, but when of a simple character it is not ordinarily considered as manufacture by those in the industry. Consequently, in those cases where the quasi-manufacturing processes applied to the crude products at the mine or quarry are of a very simple character, the business as a whole is treated as pertaining to the mining and quarrying industry, and no part of the statistics relating to it is segregated for inclusion with the returns for manufactures.

On the other hand, in many cases there are applied to materials at the mine or the quarry manufacturing processes of a character so elaborate that it is most desirable to take them into consideration in the census of manufactures. This desirability is particularly great in those instances where the same kinds of manufacturing processes are in certain cases conducted at the mine or quarry and in other cases by establishments distant from the mines or quarries and not operated under the same ownership. For example, there are many concerns which operate copper mines and in immediate conjunction therewith operate smelters for handling copper ore, sometimes keeping only a single set of books for both branches, while at the same time there are other copper smelters distant from mines and under separate ownership. If the census statistics of manufactures are to cover the copper-smelting industry completely, it is obviously necessary to include data relating to those smelters which are operated in immediate conjunction with mines.

The policy actually pursued by the Census Bureau at the Thirteenth Census with respect to industries on the border line between mining and manufacturing has been as follows:

(1) In the case of most of those industries in which there were establishments which conducted both mining or quarrying operations and manufacturing operations of a more or less elaborate character, the data for each such establishment, as a whole, have been included in the census statistics of mines and quarries and also in the census statistics of manufactures.

(2) In the case of the coal and coke industry and the copper industry, however, if an establishment conducted at the same time mining and manufacturing operations, the data for both have been included in the statistics for mines and quarries, but in connection with the statistics of manufactures only data relating to the manufacturing branch have been included; if separate accounts were not kept, by means of which accurate data could be reported, as sometimes was the case, an estimated segregation has been made. The statistics of coke manufacture and of copper smelting contained in the reports for manufactures thus relate only to the manufacturing branch of the business. In cases where they are conducted at the mines the cost of materials as presented in the statistics for manufactures includes a value, sometimes more or less arbitrary, assigned to the coal or ore as produced by the mine. On the other hand, in the mining statistics the value of the product for bituminous coal mines and copper mines having coke ovens or smelters includes the value of the finished product of the ovens or smelters, duplication being avoided by assigning no value to the coal or ore. In a few cases a similar policy has been pursued with respect to establishments in other industries.

(3) On the other hand, in the case of a few industries simple and inexpensive mining or quarrying operations are conducted in connection with a business in which much the greater part of the activities are of a manufacturing character. These are treated only in the statistics for manufactures. This is the case with the brick and tile, cement, lime, and pottery industries.

The reason why the Census Bureau thus adopted a different policy in the case of some border-line industries from that adopted in the case of others was one of practical convenience. In the case of most industries in which the manufacturing operations are conducted in conjunction with mining and quarrying, the two branches are so intimately associated that a segregation of the statistics could be made only on the basis of the roughest kind of estimates. In the case of the bituminous coal and copper mines operating, respectively, coke ovens and smelters, however, the two branches of business are usually much more sharply divided, and many of the establishments were able to furnish for the two separately either accurate statistics or estimates approaching closely to accuracy. In the case of industries of the third group, again, the operations of manufacturing and of mining or quarrying are so intimately associated that segregation would be almost impossible, and in view of the minor importance of the mining or quarrying operations it seemed best to include the data only in the statistics for manufactures.

The following table shows, for 1909, the principal items of the statistics of mines and quarries as contained in the present volume, side by side with the corresponding items relating to manufactures as published in the volume dealing with that subject, together with figures showing the numbers or amounts which have been included both in the statistics for mines and quarries and in those for manufactures.

Table 1	Statistics of manufactures.	Statistics of mines and quarries.	Amounts included in statistics for both manufactures and mines and quarries.
Employees	7,405,313	1,109,419	77,169
Salaried employees	790,267	44,127	3,973
Wage earners	[1] 6,615,046	[2] 1,065,293	73,196
Capital	$18,428,269,706	$3,280,525,841	$199,368,976
Expenses:			
Services	4,365,612,851	640,167,630	43,716,337
Salaries	938,574,967	53,393,551	4,842,929
Wages	3,427,037,884	586,774,079	38,873,408
Materials	12,142,790,878	247,866,304	34,645,222
Miscellaneous	[3] 1,945,685,870	[3] 154,608,759	7,859,109
Value of products	20,672,051,870	1,238,410,322	216,347,593

[1] Average number.
[2] Number December 15, or nearest representative day.
[3] Includes royalties and amount paid for contract work.

It should be clearly understood that in the case of the statistics of materials and of value of products the figures in the last column of this table by no means represent the full magnitude of the duplication of data for mines and quarries in the data for manufactures. Almost the entire product of mining and quarrying industries is used as raw material in manufacturing industries, and the value of products of the former largely appears as cost of materials for the latter. To add together the value of products of manufacturing industries and the value of products of mines and quarries, as shown in the table, would give a total having no real significance, and it is of course equally beside the point to add together the figures for cost of materials for the two great branches of industry.

The figures as to duplication of cost of materials and value of products given in the last column of the table represent merely the sum of those items which have been directly, as such, counted twice, once in the statistics for manufactures and once in those for mines and quarries. For example, the case may be taken of an establishment engaged in quarrying stone and making grindstones at the quarry, the total value of whose product in the form in which it leaves the establishment is $10,000. This $10,000 would appear in the value of products of manufacturing industries and also in the value of products of mines and quarries, and would consequently enter into the total shown as duplication in the third column of the table. On the other hand, if a quarrying establishment produced stone valued at $5,000 and sold it to a manufacturing establishment which converted it into grindstones worth, say, $10,000, no duplication would be shown in the third column of the table, but it is obvious that the actual value of the final product of the two establishments would be $10,000 and not $15,000, which would be the sum of the values actually entering into the statistics.

On the other hand, in the case of the items covered by the table other than cost of materials and value of products, there is some significance in adding the figures for manufactures to those for mines and quarries and deducting the duplication shown in the third column of the table. By this method it appears that the number of employees in mining and quarrying and in manufacturing industries combined in 1909 was 8,437,554, of which number 830,421 were salaried employees and 7,607,133 were wage earners. The total expenditure of the two groups of industries for salaries amounted to $987,125,589, the total for wages to $3,974,938,355, and the total for miscellaneous expenses to $2,092,435,520.

The following table names the mining industries in which there were in 1909 establishments all or part of the statistics for which were included with the statistics for manufactures as well as with those for mines and quarries, and shows for each the amount of direct duplication in the number of wage earners and the value of products.

Table 2 — Industry	Totals appearing in statistics of mines and quarries: Wage earners.	Totals appearing in statistics of mines and quarries: Value of products.	Numbers or amounts directly duplicated in statistics of manufactures: Wage earners.	Numbers or amounts directly duplicated in statistics of manufactures: Value of products.
Total	**744,662**	**$979,161,594**	**73,196**	**$216,347,593**
Bluestone	2,175	1,588,486	945	639,962
Coal, bituminous	569,789	627,962,464	28,873	67,666,062
Copper	53,143	134,616,967	6,596	197,426,734
Feldspar	225	271,437	65	89,569
Fuller's earth	345	315,762	56	58,294
Granite	20,561	18,967,976	12,234	12,234,433
Graphite	494	344,139	35	29,263
Gypsum	3,773	5,912,819	2,697	4,923,871
Lead and zinc	21,693	31,363,994	639	4,404,529
Limestone	37,695	29,832,492	3,669	3,235,672
Marble	6,313	6,299,129	4,448	4,126,639
Peat	182	109,947	72	43,269
Quartz	184	221,625	76	93,569
Sandstone	9,908	7,702,423	3,989	2,461,723
Slate	9,425	6,054,174	3,389	6,623,389
Talc and soapstone	1,236	1,174,516	1,247	1,282,974
Traprock	6,269	5,378,317	289	271,497
All other industries [1]	1,165	967,446	779	696,382

[1] Includes "barytes," "grindstones," "mineral pigments," "soythestones," "tripoli," and "whetstones."

Period covered.—The returns relate to the calendar year 1909, or the business year which corresponded most nearly to that calendar year. The statistics cover a year's operations, except for enterprises which began or discontinued business during the year.

Number of operators.—As a rule, the unit of enumeration was the "operator." Every individual, firm, or corporation was required to report all mines, quarries, or wells which were operated by them. Where several mines, quarries, or wells managed separately were owned by the same operator, it was optional with the operator to furnish one report for all his operations, or a separate report for each of his properties. Separate reports were obtained for all properties operated in different states, even where they were owned by the same operator. Likewise, where the operations of one individual, firm, or corporation covered more than one class of mines and quarries, such as coal, iron, limestone, etc., a separate report was received for each industry. The total number of operators, accordingly, as shown by the original returns, included a small amount of duplication. As far as practicable, all duplications of this character within the

same industry were eliminated by the consolidation of the reports for the same operator. All such duplications have been eliminated for the coal, petroleum and natural gas, iron, and copper industries.

Number of mines, quarries, and wells.—Under this designation are given the total number of mines and quarries in operation or in the course of development at any time during the calendar year 1909, or the business year that corresponded most nearly to that calendar year, and the number of completed petroleum and natural gas wells in operation on December 31, 1909.

In most mining and quarrying industries the number of mines or quarries varies but little from the number of operators, the principal variations being found in the mining of anthracite coal, iron, and copper, with an average of more than two mines per operator; in the mining of tungsten, with an average of more than five mines per operator; and in the quarrying of gypsum, with an average of nearly three quarries per operator. In the production of petroleum and natural gas, on the other hand, there was an average of more than 20 wells to one operator.

Capital.—The census schedule required every operator to state the total amount of capital invested in the enterprise on the last day of the business year reported, as shown by his books. There is, however, a great diversity in the methods of bookkeeping in use by different operators. As a result, the statistics for capital lack uniformity. Some of the reported figures apparently represent capital stock at face value; others include large investments in mineral lands which are not at present being actively mined, but are held in reserve; still others may include expenditures for unproductive mining ventures in no way related to the operations carried on during the census year.

For the reasons stated, schedules in which the inquiry in relation to capital remained unanswered, notwithstanding every effort made to secure the information required, were included in the general tabulation.

Land tenure.—The Thirteenth Census was the first to extend the inquiry relating to land tenure to all branches of the mining industry. At the Eleventh Census this inquiry was confined to coal lands. At the special census of mines and quarries for 1902, the inquiry was confined to precious-metal mines. The annual statistics of the United States Geological Survey for 1909 included an inquiry in relation to the acreage and form of tenure of oil and gas lands. This inquiry was extended by the Bureau of the Census to all mines, quarries, and petroleum and natural gas wells. A special inquiry for that purpose was inserted in the general schedule for mines and quarries. This inquiry, however, was omitted from the general schedule for petroleum and natural gas wells, being included in the supplemental schedule calling for information intended for use by both bureaus. The inquiry was in all cases confined to land connected with the enterprise for which reports were returned. In many instances land held in reserve by mine operators for future development was evidently included in their returns, although not under operation in 1909. In some of the quarrying industries the acreage of the entire farm on which the quarry was located was sometimes reported.

A small percentage of the schedules contained no answers to the inquiries relating to land tenure. In view of the character of the statistics relating to this subject, such schedules, when otherwise satisfactory, were included in the general tabulation.

Expenses of operation and development.—The expenses reported for producing mines include the cost both of operation and of development work which was done in connection with operation.

A certain amount of development work is incidental to the operation of every mine. The general mining schedule inquired for the total amount which had been expended during the year 1909 for development work, this amount being included in the expenses reported for services, materials and supplies, and miscellaneous objects. Where an enterprise reported no production, the total expenses reported represented development work only. The figures reported for development work by producing enterprises, however, showed a lack of uniformity. Many mine operators kept no separate accounts for development work and the figures reported by them were mere estimates of doubtful accuracy; where such accounts were kept there was considerable variety in the system of charging specific items of expense to development work or operating expenses. As the totals of these heterogeneous figures would be meaningless, they have not been used in the present report.

Supplies and materials.—This item includes the cost of lumber and timber used for repairs, mine supports, track ties, etc.; iron and steel for blacksmithing; rails, frogs, sleepers, etc., for tracks and repairs; renewals of tools and machinery and materials for repairs; and supplies, explosives, oil, etc., as well as the cost of fuel and the rent of power. The schedule called only for the cost of such supplies and materials as had been used during the year covered by the report. Accurate figures, however, could be furnished only in those cases where the operators kept an account of supplies and materials used, or had an inventory made of all in stock at the beginning and at the end of the year. Such a system of accounting is far from general among mine operators, and there is reason to believe that in many cases the reported cost of supplies and materials covered all purchased during the year rather than those used during the year. The crude product of some operators was purchased by others for further dressing or refining or was resold in the form in which purchased; the cost of such materials is shown in a separate column in the general tables for producing mines, but in all other tables it is included in the general item of cost of supplies and materials.

Miscellaneous expenses.—In the general tables royalties and the rent of mines, taxes, and the amounts paid for contract work are shown in separate columns. All other expenses not enumerated separately are combined under the head of "Rent of offices and other sundry expenses," which includes rent of offices and buildings other than at the mine, quarry, or well, use of patents, insurance, ordinary repairs of buildings and machinery (not including materials therefor where carried in separate accounts), advertising, damages, traveling expenses, and all other sundry expenses.

Value of products.—The value of products for 1909 in most cases represents the value of the products marketed during that year, not the value of those mined during that year. In this respect the data differ from those usually obtained for manufacturing establishments. In order to ascertain the value of the products mined during the year 1909, account would have had to be taken of the inventories at the beginning and at the close of the year. In many mining industries, however, no such inventories are made, by reason of the purely speculative value of the crude product lying on the dump.

Another element of inaccuracy inherent in the statistics as to the value of products is due to the combination of mining with manufacturing. Most of the product of iron mines is not sold as ore, but is used in blast furnaces operated by the owners of the mines. A large proportion of the output of coal is likewise used in iron and steel works operated by the owners of the coal mines, while a considerable proportion also is controlled by railway companies and other industrial concerns which own the coal mines, either directly, or indirectly through subsidiary companies. In such cases the reported value of the mining product is often a mere item of bookkeeping which may or may not reflect the actual market value of the product.

The total value of products for some industries includes a certain amount of duplication, due to the fact that the crude product of some operators was used as material by others whose mines or quarries were equipped with dressing or refining plants; the total value of products for the industry, accordingly, includes both the crude product and the refined product made from it. In order to eliminate this duplication and to obtain the approximate value of products for each industry, the cost of such materials, which is shown in a separate column in the general tables for producing mines, should be subtracted from the total value of products for the industry. There is, however, a certain degree of inaccuracy involved in such a computation, because the purchaser of the crude product usually figures freight as a part of the cost of his materials, whereas the value reported by the producer represents the selling value at the mine.

Statistics of the value of each mineral product were obtained by the Bureau of the Census in cooperation with the United States Geological Survey, but the two bureaus follow different methods in presenting these statistics. The Geological Survey shows separately the value of each mineral product, whereas the Bureau of the Census presents the value of products of each mining industry, which often includes the value of some products not covered by the industry designation. The crude product of metalliferous mines, for example, may include varying combinations of metals, such as gold, silver, copper, lead, zinc, and iron. Similarly, the total value of all products of the granite quarries is not identical with the value of the total output of granite, but may include the value of some marble or other stone quarried in connection with the principal product.

Another cause contributing to the difference in the reports of the two bureaus was the fact that in some instances the agent, in securing the reports of enterprises finishing the product at the quarry before marketing, returned two schedules for each enterprise. In one schedule were reported the estimated cost of quarrying and the value of the rough stone, and in the other the estimated cost of manufacturing the rough product into the form in which it was marketed and the value of the finished product were reported. In such cases the two schedules were combined and used by the Bureau of the Census in its report on mines and quarries, while the Geological Survey used only the schedule relating to quarrying proper: Again, in some instances reports could be secured only for the value of the products and not for the other data called for by the census schedule; these reports have been excluded from the general tables of this report, but were included by the Survey. Quarries operated by penal and elemosynary institutions were included by the Geological Survey but omitted from the general tables by the Bureau of the Census. In some instances the Bureau of the Census, being unable to obtain the financial data called for by the schedule except for some period other than the twelve months ending December 31, 1909, has taken the product for the business year of the enterprise reporting, while in the Survey report the product for each enterprise is for the year ending December 31, 1909. In addition to the foregoing differences in method which apply to all industries, certain differences existed in particular industries, but were not common to all. Thus, in the limestone industry, the figures published by the Geological Survey exclude all limestone used at cement plants, while the Bureau of the Census includes such limestone. For metalliferous mines other than iron mines, the Survey gives the value of the metal recovered by the refineries which the ore ultimately reaches, while the Bureau of the Census presents data relating only to the products sold by mine operators. In the sandstone industry the Bureau of the Census includes under sandstone the sand produced by crushing the stone at the quarry, while the Geological Survey includes this sand under sand and gravel. In the blue-

stone industry the figures used by the Survey were secured from the dealers, while the Census Bureau used figures secured from the producers. In the natural gas industry the Bureau of the Census used only the reports of producing companies, whereas the United States Geological Survey included in its statistics the reports of distributing companies which purchased their natural gas from producing companies.

The following table shows the value of products as shown by the general tables of this report and as published by the Geological Survey in its report "Mineral Resources of the United States: 1909," and the differences existing in the two reports. In the column showing the differences the plus and minus signs indicate the amount which the census figures exceed or are less than those published by the Survey.

Table 5

INDUSTRY.	Report of Census.	Report of Geological Survey.	Difference.
Fuels:			
Coal, anthracite	$149,180,471	$149,415,847	−$235,376
Coal, bituminous	[1] 401,577,477	405,486,777	−3,909,300
Petroleum and natural gas	185,416,684	191,455,724	−6,039,040
Peat	109,047	127,042	−17,995
Metals:			
Iron	106,947,082	110,290,596	−3,343,514
Copper	134,616,987	142,083,711	−7,466,724
Precious metals	94,123,180	108,503,889	−14,380,709
Lead and zinc	31,363,094	(2)	
Quicksilver	868,458	888,710	−20,252
Manganese	20,435	19,675	+760
Tungsten	563,457	614,370	−50,913
Structural materials:			
Limestone	29,832,492	32,070,401	−2,237,909
Granite	18,907,976	19,581,597	−583,621
Sandstone	7,702,423	6,564,052	+1,138,371
Marble	6,229,120	6,538,905	−309,785
Slate	6,054,174	5,441,418	+612,756
Traprock	5,578,317	5,133,842	+444,475
Bluestone	1,588,406	1,446,402	+142,004
Miscellaneous:			
Asbestos	65,140	62,603	+2,537
Asphaltum and bituminous rock	466,461	2,138,273	−1,671,812
Barytes	224,768	198,561	+26,205
Bauxite	670,829	679,447	−8,618
Miscellaneous—Continued.			
Buhrstones and millstones	$34,441	$35,393	−$952
Clay	2,945,948	3,449,707	−503,759
Corundum and emery	18,185	18,185	
Feldspar	271,437	401,788	−130,351
Fluorspar	288,509	291,747	−3,238
Fuller's earth	315,762	301,604	+14,158
Garnet	101,920	102,315	−395
Graphite	344,130	345,509	−1,379
Grindstones	413,296	804,051	−390,755
Gypsum	5,812,810	5,906,738	−93,928
Infusorial earth and tripoli	142,060	122,348	+19,712
Magnesite	68,463	37,860	+30,603
Marl	13,307	45,053	−31,746
Mica	206,794	280,529	−73,735
Mineral pigments	151,015	613,133	−462,118
Monazite and zircon	64,472	65,282	−810
Oilstones, scythestones, and whetstones	206,028	214,019	−7,991
Phosphate rock	10,781,192	10,772,120	+9,072
Precious stones	315,464	534,380	−218,916
Pumice	30,097	33,439	−3,342
Pyrite	676,984	1,028,157	−351,173
Quartz	231,025	249,466	−18,441
Sulphur	4,432,066	4,432,066	
Talc and soapstone	1,174,516	1,221,959	−47,443

[1] Exclusive of the value of coke produced from coal.

[2] Value of lead and zinc not published by Geological Survey.

CHAPTER II.

SUMMARY AND ANALYSIS OF RESULTS

Continental United States and noncontiguous territory: 1909.—Table 1 gives for 1909 the principal statistics collected by the Bureau of the Census for all mines and quarries and petroleum and gas wells within the area of enumeration. In addition to continental United States this area included in 1909 Alaska, Hawaii, and Porto Rico. The figures here given include nonproducing as well as producing mines and constitute the most general summary of the results of the investigation.

Table 1	NUMBER OR AMOUNT: 1909				
	Total.	Continental United States.	Alaska.	Hawaii.	Porto Rico.
Number of operators	24,355	23,664	673	4	14
Number of mines and quarries	27,260	27,240		6	14
Number of petroleum and gas wells	166,448	166,448			
Persons engaged in mining industries, Dec. 15, 1909	1,175,188	1,166,948	8,025	45	170
Proprietors and firm members, total	35,208	33,691	1,501	2	14
Number performing manual labor in connection with mines, quarries, and wells	10,740	10,299	441		
Salaried employees	46,694	46,475	219		
Wage earners	1,093,286	1,086,782	6,305	43	156
Primary horsepower	4,722,479	4,699,910	22,347	197	25
Capital	$3,710,356,533	$3,662,527,064	$47,749,164	$45,700	$34,695
Expenses of operation and development	1,087,437,081	1,074,191,429	13,220,200	19,760	5,692
Services	662,422,226	655,584,467	6,819,850	14,058	3,851
Salaries	56,286,988	55,878,478	408,510		
Wages	606,135,238	599,705,989	6,411,340	14,058	3,851
Supplies and materials	263,019,615	260,110,898	2,902,956	5,371	390
Royalties and rent of mines	65,683,384	64,154,928	1,527,995	206	257
Contract work	32,335,580	30,690,458	1,645,063		59
Miscellaneous	63,976,276	63,650,680	324,336	125	1,135
Value of products	1,255,370,163	1,238,410,322	16,933,427	20,955	5,459

Of the total number of persons engaged in mining industries in the area covered by the preceding table, only a little more than one-half of 1 per cent were in Alaska, while the mining operations in Hawaii and Porto Rico were insignificant.

Owing to the fact that a certain number of mines in continental United States and Alaska were engaged in development work only, during the census year, the figure for value of products in 1909, $1,255,370,163, relates to a smaller number of enterprises than the figures for persons engaged in the industries, expenses, etc.

While Alaska, Hawaii, and Porto Rico reported some mineral products in 1909, as shown by the above table, the discussion of mining operations in this chapter is confined to the data reported for continental United States (referred to simply as the United States).

Producing and nonproducing mines.—In some aspects of the statistics of mining industries the distinction between producing and nonproducing mines is important. So far as it is possible to bring the figures in regard to production into relation with the various factors of operation, particularly the number of employees and the expenses of operation, it is necessary to confine comparisons to the producing mines. Table 2 gives comparative figures for producing and nonproducing mines in the United States.

Table 2	All enterprises.	Producing enterprises.	NONPRODUCING ENTERPRISES.	
			Number or amount.	Per cent of total.
Number of operators	23,664	19,915	3,749	15.8
Number of mines and quarries	27,240	18,164	9,076	33.3
Number of wells	166,448	166,320	128	(1)
Persons engaged in mining industry	1,166,948	1,139,332	27,616	2.4
Proprietors and firm members, total	33,691	29,902	3,789	11.2
Number performing manual labor	9,937	8,861	1,076	10.8
Salaried employees	46,475	44,127	2,348	5.1
Wage earners	1,086,782	1,065,293	21,489	2.0
Primary horsepower	4,699,910	4,608,253	91,657	2.0
Capital	$3,662,527,064	$3,380,325,841	$282,201,223	7.7
Expenses of operation and development	1,074,191,429	1,042,642,693	31,548,736	2.9
Services	655,584,467	640,167,630	15,416,837	2.4
Salaries	55,878,478	53,393,551	2,484,927	4.4
Wages	599,705,989	586,774,079	12,931,910	2.2
Supplies and materials	260,110,898	247,866,304	12,244,594	4.7
Royalties and rent of mines	64,154,928	63,973,587	181,341	0.3
Contract work	30,690,458	28,887,898	1,802,560	5.9
Miscellaneous	63,650,680	61,747,276	1,903,404	3.0
Value of products	1,238,410,322	1,238,410,322		

[1] Less than one-tenth of 1 per cent.

Perhaps the most satisfactory index of the relative importance of the two classes of mines shown in the preceding table is the number of wage earners and the amount of primary power, the figures for nonproducing mines representing exactly 2 per cent of the total in each instance. The average number of wage earners per operator for the nonproducing mines is 6 and for the producing mines 53.

Additional details in regard to nonproducing mines are given in Tables 9 and 10 (pp. 339 and 340), which present separate figures for most of the different mining industries. The further discussion in this chapter of the statistics for 1909 will deal primarily with the producing mines, with only incidental reference to the nonproducing enterprises.

There were reported in all mining industries in the United States in 1909, as shown by the previous table, 19,915 operators of producing mines, who employed 1,065,283 wage earners and reported products valued at $1,238,410,322.

Geographic distribution of producing enterprises.—The distribution of the mining industries by geographic divisions and states is shown in Table 3, which gives the number of wage earners employed and the value of products for each division and state, with the percentage which such number or value forms of the total.

Table 3

DIVISION AND STATE.	PRODUCING ENTERPRISES: 1909						
	Number of operators.	Number of mines and quarries.	Number of wells.	Wage earners (Dec. 15, or nearest representative day). Number.	Wage earners (Dec. 15, or nearest representative day). Per cent of total.	Value of products. Amount.	Value of products. Per cent of total.
United States	**19,915**	**18,144**	**166,320**	**1,065,283**	**100.0**	**$1,238,410,322**	**100.0**
GEOGRAPHIC DIVS.:							
New England	519	596	.....	18,254	1.7	17,327,242	1.4
Middle Atlantic	6,333	3,903	71,122	402,937	37.8	370,742,262	30.0
East North Central	4,132	2,662	56,379	213,660	20.1	237,534,170	19.2
West North Central	2,300	2,503	3,450	88,458	8.3	130,252,538	10.5
South Atlantic	1,358	1,582	15,146	118,006	11.1	105,714,462	8.5
East South Central	839	1,109	1,110	70,356	6.7	49,143,289	3.9
West South Central	1,229	422	14,700	28,262	2.6	47,530,937	3.8
Mountain	1,972	3,728	97	93,072	8.7	205,053,900	16.6
Pacific	1,536	1,640	4,316	31,788	3.0	75,111,522	6.1
NEW ENGLAND:							
Maine	97	102	.....	2,471	0.2	2,056,063	0.2
New Hampshire	45	53	.....	1,520	0.1	1,308,597	0.1
Vermont	137	182	.....	8,388	0.8	8,221,323	0.7
Massachusetts	139	147	.....	3,508	0.3	3,467,888	0.3
Rhode Island	21	27	.....	377	0.1	897,606	(1)
Connecticut	71	75	.....	1,990	0.2	1,375,765	0.1
MIDDLE ATLANTIC:							
New York	1,351	752	11,342	11,303	1.1	13,334,975	1.1
New Jersey	131	151	.....	6,801	0.6	8,347,501	0.7
Pennsylvania	4,851	3,000	59,780	384,833	36.1	349,059,786	28.2
E. NORTH CENTRAL:							
Ohio	1,876	964	35,067	57,185	5.4	63,767,112	5.1
Indiana	1,010	480	10,372	27,559	2.6	21,934,201	1.8
Illinois	915	752	10,918	82,436	7.7	76,658,974	6.2
Michigan	83	173	21	40,397	3.8	67,714,479	5.5
Wisconsin	248	286	.....	6,083	0.6	7,459,404	0.6
W. NORTH CENTRAL:							
Minnesota	153	250	.....	18,114	1.7	58,664,852	4.7
Iowa	272	431	.....	19,010	1.8	13,877,781	1.1
Missouri	1,021	1,224	39	29,676	2.8	31,667,525	2.5
North Dakota	53	53	6	800	0.1	564,812	(1)
South Dakota	26	45	2	3,866	0.4	6,432,417	0.5
W. NORTH CENTRAL—Continued.							
Nebraska	18	20	.....	491	(1)	$322,517	(1)
Kansas	643	582	3,402	16,441	1.5	18,722,634	1.5
SOUTH ATLANTIC: [2]							
Delaware	9	9	.....	628	(1)	516,213	(1)
Maryland	126	173	.....	7,745	0.7	5,782,045	0.5
Virginia	150	244	.....	16,893	1.6	8,795,648	0.7
West Virginia	798	718	15,146	78,404	7.4	76,287,389	6.2
North Carolina	118	130	.....	2,826	0.3	1,358,617	0.1
South Carolina	29	32	.....	2,014	0.2	1,252,792	0.1
Georgia	92	109	.....	4,014	0.4	2,874,595	0.2
Florida	36	96	.....	5,483	0.5	8,846,665	0.7
E. SOUTH CENTRAL: [2]							
Kentucky	437	442	1,109	22,033	2.1	12,100,075	0.9
Tennessee	216	365	1	18,028	1.7	12,692,547	1.0
Alabama	177	302	.....	30,795	2.9	24,350,667	2.0
W. SOUTH CENTRAL:							
Arkansas	96	146	62	6,422	0.6	4,603,845	0.3
Louisiana	33	2	246	953	0.1	6,547,050	0.5
Oklahoma	864	212	12,113	13,920	1.3	25,037,892	2.1
Texas	236	92	2,279	6,957	0.6	10,742,150	0.9
MOUNTAIN:							
Montana	373	543	.....	20,503	1.9	54,991,961	4.4
Idaho	174	370	.....	3,592	0.3	8,649,342	0.7
Wyoming	66	95	21	8,499	0.8	10,572,188	0.9
Colorado	672	1,575	76	24,709	2.4	45,080,135	3.7
New Mexico	98	285	.....	5,682	0.5	5,587,744	0.4
Arizona	135	251	.....	13,451	1.3	34,217,651	2.8
Utah	188	235	.....	11,004	1.0	22,083,282	1.8
Nevada	266	374	.....	5,572	0.5	23,271,597	1.9
PACIFIC:							
Washington	93	170	.....	7,343	0.7	10,537,556	0.9
Oregon	116	161	.....	1,087	0.1	1,191,512	0.1
California	1,329	1,279	4,316	23,358	2.2	63,382,454	5.1

[1] Less than one-tenth of 1 per cent.

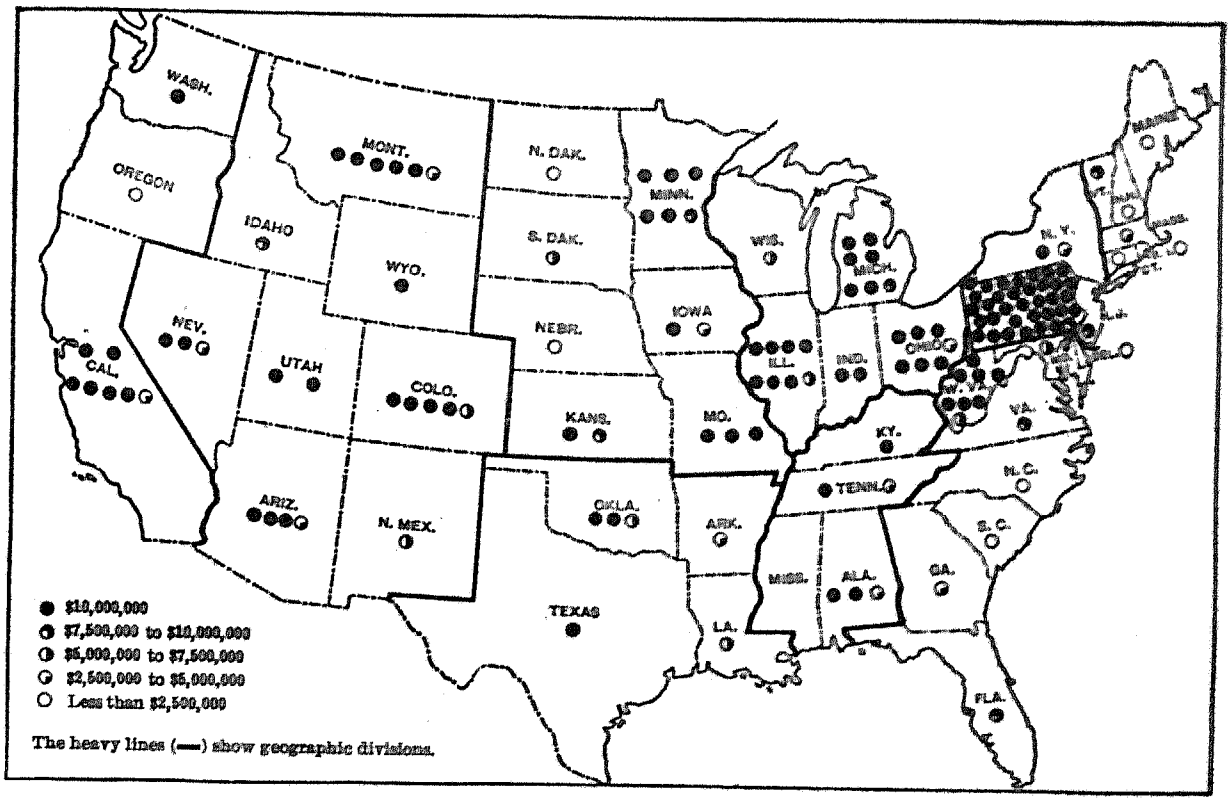
[2] No mineral production in District of Columbia or Mississippi.

Whether the importance of the mining industry be measured by the value of its products or by the number of wage earners employed, the Middle Atlantic division easily ranks first among the several geographic divisions, the value of its mineral products in 1909 amounting to $371,000,000, or 30 per cent of the total for the United States. Next in order was the East North Central division, with products valued at $238,000,000, or about one-fifth of the total. The mineral products of these two divisions consist largely of coal. Other divisions with a considerable mineral production are the Mountain, West North Central, and South Atlantic.

The prominence of the Middle Atlantic division in mineral production is due almost wholly to the state of Pennsylvania, which, with products (mainly coal) valued at nearly $350,000,000 in 1909, reported more than one-fourth of the value of all mineral products in the United States. No other state approaches it in importance. Illinois and West Virginia, which rank next in importance, each had products valued at a little more than $76,000,000, or less than one-fourth the value shown for Pennsylvania. Other states where the value of mineral products exceeded $50,000,000 are Michigan, Ohio, California, Minnesota, and Montana. The eight states named reported in 1909, 65.4 per cent of the value of all mineral products for the United States.

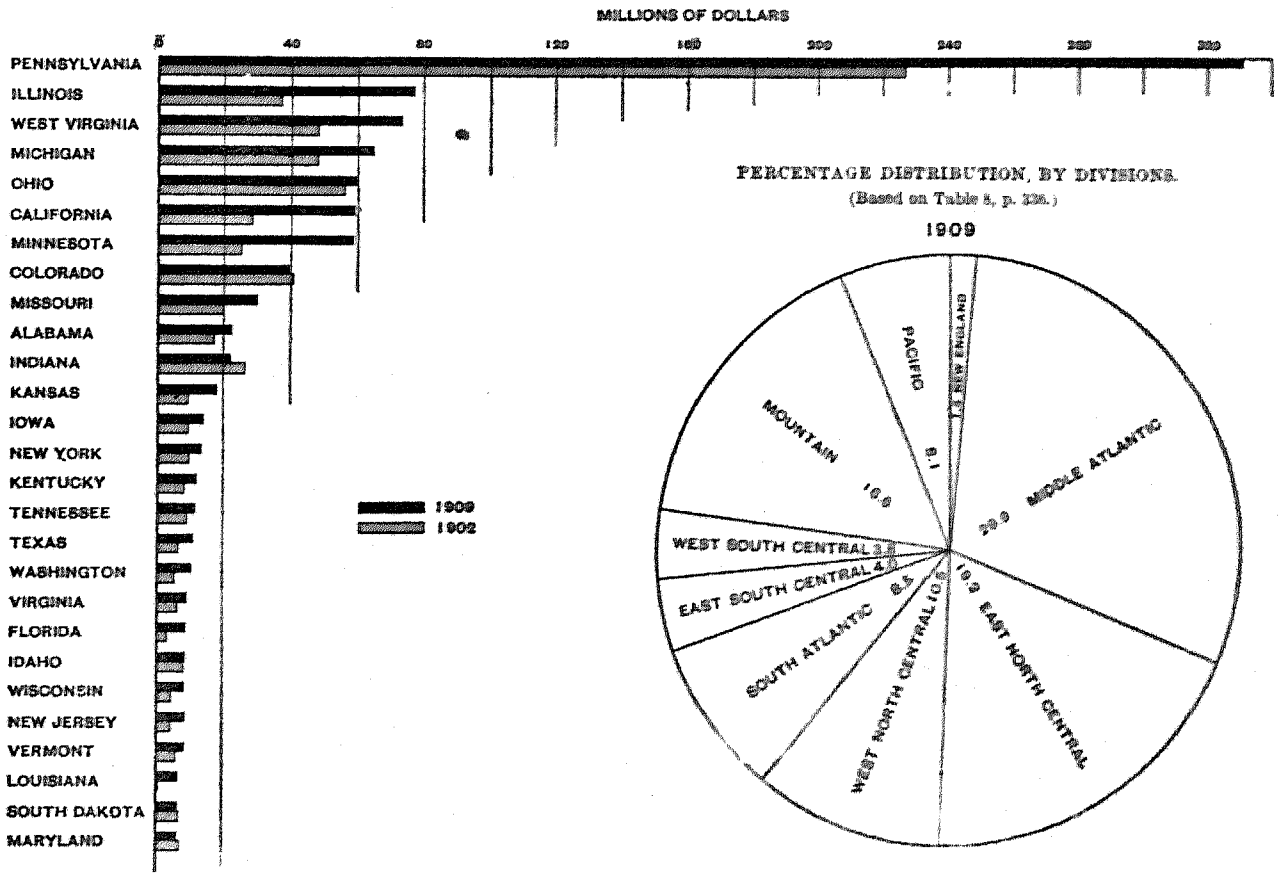
There are several states in which the mineral production is quite insignificant. In the District of Columbia and Mississippi no mineral production was reported. Rhode Island, North Dakota, Nebraska, and Delaware each contributed less than one-tenth of 1 per cent of the whole value of mineral products, while the contribution of Maine, New Hampshire, Massachusetts, Connecticut, North Carolina, South

VALUE OF PRODUCTS, MINING INDUSTRIES: 1909.



VALUE OF PRODUCTS, MINING INDUSTRIES, BY STATES: 1902 AND 1909.

(Based on Table 2, p. 318.)



PERCENTAGE DISTRIBUTION, BY DIVISIONS.

(Based on Table 8, p. 326.)

Carolina, Georgia, Arkansas, New Mexico, and Oregon was less than one-half of 1 per cent in each case.

The distribution of the wage earners employed in producing mines among the divisions and states follows approximately the distribution of the total value of products. Where coal is the chief mineral product, however, the number of wage earners is relatively greater than elsewhere. The Middle Atlantic division reported a considerably greater percentage of all wage earners in the producing mines of the country than of the total value of mineral products. In less marked degree the same statement holds true of the East South Central, South Atlantic, East North Central, and New England divisions, while each of the remaining divisions reported a larger percentage of the total value of products than of the total number of wage earners. Pennsylvania employed 36.1 per cent of all the wage earners, Illinois 7.7 per cent, and West Virginia 7.4 per cent, these three leading coal states together reporting more than one-half of all the wage earners employed in mining industries.

Principal mining industries.—Table 4 shows the relative importance of the principal mining industries in 1909.

Table 4 — PRODUCING ENTERPRISES: 1909

INDUSTRY.	Number of operators.	Wage earners (Dec. 15, or nearest representative day). Number.	Per cent of total.	Value of products. Amount.	Per cent of total.
All industries	19,915	1,065,283	100.0	$1,238,410,322	100.0
Coal	3,695	743,293	69.8	577,142,935	46.6
Anthracite	192	173,504	16.3	149,180,471	12.0
Bituminous	3,503	569,789	53.5	427,962,464	34.6
Petroleum and natural gas	7,793	39,831	3.7	185,416,684	15.0
Metals:					
Copper	161	53,143	5.0	134,616,987	10.9
Iron	176	52,220	4.9	106,947,082	8.6
Precious metals	2,282	37,815	3.6	94,123,180	7.6
Deep mines	1,604	33,616	3.2	83,885,928	6.8
Placer mines	678	4,199	0.4	10,237,252	0.8
Lead and zinc	977	21,603	2.0	31,363,094	2.5
Structural materials	3,968	92,350	8.7	75,992,908	6.1
Limestone	1,665	37,695	3.5	29,832,492	2.4
Granite	707	20,561	1.9	18,997,976	1.5
Sandstone	595	9,908	0.9	7,702,423	0.6
Marble	77	6,313	0.6	6,239,120	0.5
Slate	185	9,428	0.9	6,054,174	0.5
Traprock	196	6,260	0.6	5,578,317	0.5
Bluestone	563	2,175	0.2	1,588,406	0.1
Miscellaneous:					
Phosphate rock	51	8,186	0.8	10,781,192	0.9
Gypsum	78	3,778	0.4	5,812,810	0.5
Sulphur	4	408	(1)	4,422,066	0.4
Clay	261	3,871	0.4	2,945,948	0.2
All other	449	8,775	0.8	8,835,436	0.7

[1] Less than one-tenth of 1 per cent.

The foregoing table presents statistics for 9 industries which in 1909 had products exceeding $10,000,000 in value. These 9 industries employed 95.2 per cent of all the wage earners engaged in producing enterprises and contributed 96 per cent of the total value of the products of mining industries. Statistics are also given in the table for 8 other mining industries having products between $1,500,000 and $10,000,000 in value. The 17 industries shown separately in the table employed over 99 per cent of the wage earners engaged in productive enterprises and contributed more than 99 per cent of the total value of products of mining industries.

Coal mining far outranks any other industry in importance. In 1909 it furnished occupation to more than two-thirds of all the wage earners employed by producing mines, quarries, and wells, and contributed only a little less than one-half of the total value of products reported. Of the total value of coal produced, the anthracite mines furnished approximately one-fourth and the bituminous mines three-fourths. Another fuel industry—the production of petroleum and natural gas—ranks second in importance in value of products, but employs comparatively few wage earners.

Of the metals, copper and iron outrank the precious metals both in the value of the product mined and in the number of wage earners, but lead and zinc fall considerably below the precious metals in both respects.

General comparison for the United States: 1902–1909.—Table 5 on the next page gives statistics regarding expenses, value of products, and mechanical power for producing mines, quarries, and petroleum and gas wells in the United States for 1909 and 1902, together with the percentages of increase.

The figures in this table for 1909 vary slightly from those shown in preceding tables by reason of the differences between the present census and that of 1902 in the classification of mining industries. There are many industries on the border line between mining and manufacturing. Certain mechanical and chemical processes required for the preparation of the mineral for the market after its extraction from the ground may be performed either at the mine or at the factory where the mineral is used as material. The practices in this respect vary from industry to industry and from period to period.

At the Thirteenth Census the production of cement was classified as a manufacturing industry. The burning of lime was likewise classified as a manufacturing industry, and where the lime was burned at the limestone quarry the quarrying was regarded as a subordinate part of the manufacturing operations. At the special census of mines and quarries in 1902, however, the cement industry was included, and the burning of lime was treated as a part of the operations of the limestone quarries. In order to make the statistics for the two censuses comparable, the figures given in Table 5 include for 1909 those for the burning of lime, elsewhere treated as a manufacturing industry, and exclude for 1902 those relating to the production of cement.

On the other hand, the special census of 1902 did not include the conversion of coal into coke at the coal mines. In the Thirteenth Census reports the coke industry is treated both in the report on manufactures and in that on mines. Where coal was turned into coke at the mines, estimates were obtained for the coke-manufacturing operations and included in the statistics of manufactures. At the same time, since the

mining of the coal and its conversion at the mines into coke form, in fact, integral parts of one industrial operation, the complete report for both processes is included in the statistics for bituminous coal mines. In order, however, to make the statistics for 1909 comparable with those for 1902, all statistics relating to coke have been eliminated from the table which follows.

By reason of these adjustments the figures here printed do not correspond either to those given in the report for 1902 or to those printed elsewhere for 1909.

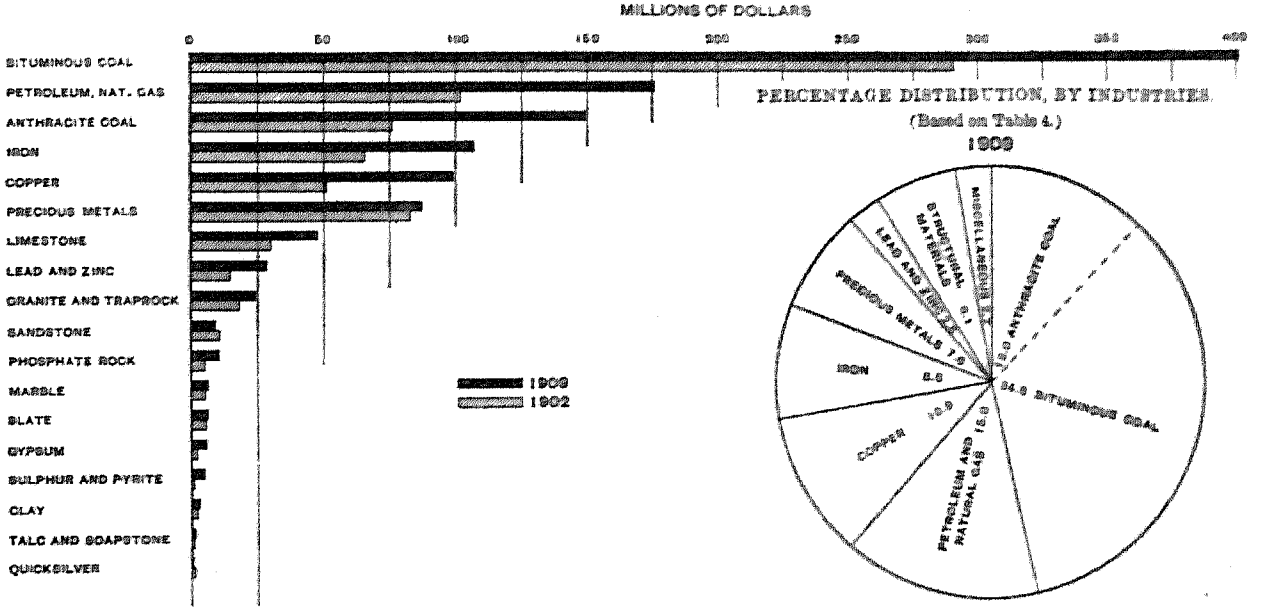
Table 5	NUMBER OR AMOUNT.		Per cent of increase.
	1909	1902	
Expenses of operation and development:			
Services	$625,610,066	$401,225,547	55.9
Supplies and materials	208,771,046	114,515,892	82.3
Royalties and rent of mines	62,456,760	34,476,227	81.2
Contract work	24,091,986	20,698,127	16.7
Value of products	1,175,475,001	771,486,926	52.4
Primary horsepower	4,556,170	2,663,954	71.0

The item "taxes, rent of offices, and other sundry expenses," which is included with the expenses of operation and development in the tables giving statistics for 1909 only, is not shown in this table for the reason that at the special census of mines and quarries in 1902 the corresponding item of expenses included interest, which was excluded at the Thirteenth Census. In 1902 the item of interest on bonds amounted to more than $13,000,000. The amount of interest paid on other loans was not reported separately. The aggregate expenses shown in the preceding table represent 96.3 per cent of the total expenses reported for 1902 exclusive of interest on bonds, while the aggregate for 1909 represents 90.6 per cent of the total expenses for that year.

In 1902 the products of mining industries were valued at $771,486,926, but in 1909 the value was reported as $1,175,475,001, an increase of 52.4 per cent in the seven years.

VALUE OF PRODUCTS, MINING INDUSTRIES: 1902 AND 1909.

(Based on Table 1, p. 317.)



PERCENTAGE DISTRIBUTION, BY INDUSTRIES.

(Based on Table 4.)

Table 1, page 317, gives comparative statistics in detail for the years 1909 and 1902, by industries. Table 6, which is based on this table, gives for the leading mining industries the value of products in 1909 and 1902, with the percentage of increase.

Table 6 INDUSTRY	VALUE OF PRODUCTS.		Per cent of increase.
	1909	1902	
All industries	$1,175,475,001	$771,486,926	52.4
Coal	550,513,999	366,642,615	50.2
Anthracite	149,180,471	76,173,586	95.8
Bituminous	401,333,395	290,468,429	38.2
Petroleum and natural gas	175,527,807	102,034,390	72.0
Copper	99,493,799	51,178,698	94.4
Iron	106,947,082	63,660,385	68.4
Precious metals	87,671,553	82,482,682	6.3
Deep mines	77,434,301	77,154,326	0.4
Placer mines	10,237,252	5,327,726	92.2
Lead and zinc	28,568,547	14,690,177	94.7
Limestone	47,784,479	30,278,877	57.8
Granite and traprock	24,576,293	18,042,943	36.2
Phosphate rock	10,731,192	4,922,943	118.0

This table shows that the greatest relative increase in the seven-year period was in the phosphate rock industry. The smallest relative increase (6.3 per cent) was in the mining of precious metals, the deep mines showing an increase in value of products amounting to only 0.4 per cent, although the less important placer mines show an increase of 92.2 per cent. Large increases are shown for the mining of copper and of lead and zinc. There was also a large increase in the case of anthracite coal, but on account of the coal strike in 1902 the figures for that year do not represent normal conditions. The percentage of increase in the bituminous coal-mining industry falls considerably below the average for all mining industries in the period under consideration. To some extent this is due to a decline in the average price of bituminous coal, for the tonnage produced increased more than 45 per cent.

Table 2, page 318, gives comparative statistics in detail for the years 1909 and 1902, by states. The following table presents certain figures for those states which show a relative increase in the value of products above the average for the United States:

Table 7

STATE.	VALUE OF PRODUCTS. 1909	VALUE OF PRODUCTS. 1902	Per cent of increase.
Louisiana	$6,539,850	$279,327	2,241.3
Florida	8,915,181	2,943,806	202.8
Minnesota	58,975,781	25,620,677	130.2
Nebraska	322,517	148,391	117.3
New Jersey	8,548,858	4,042,047	111.5
Illinois	77,214,345	37,377,226	106.6
California	59,012,946	28,611,307	106.3
Wisconsin	8,575,402	4,257,685	101.4
Washington	10,826,503	5,393,659	100.7
Kansas	18,386,812	9,526,060	93.0
North Dakota	564,812	325,967	73.3
Arkansas	4,764,784	2,840,341	67.8
Texas	11,096,588	6,737,696	64.7

Corresponding figures for those states in which the value of products showed an actual decrease from 1902 to 1909 are given in Table 8.

Table 8

STATE.	VALUE OF PRODUCTS. 1909	VALUE OF PRODUCTS. 1902	Per cent of decrease.
Colorado	$39,397,859	$40,508,286	2.7
Massachusetts	4,332,218	4,499,401	3.7
South Dakota	6,415,788	6,697,797	4.2
Georgia	2,924,741	3,080,287	5.0
Maine	3,270,766	3,650,134	10.5
Maryland	6,164,122	7,162,113	13.9
Indiana	22,324,647	26,896,393	17.0
Oregon	1,237,292	2,087,389	40.7

Colorado and Indiana are the only important mining states that show a decrease in mining activity. This decline in Colorado is manifested not only in the value of products, but also in the amount expended for salaries and wages, which decreased 7.2 per cent, and for royalties, which decreased 4.4 per cent.

Geographic distribution of the principal industries: 1909.—Table 9 gives statistics, by leading states, for each of the nine leading mining industries. A graphic presentation of the value of products is made in the following diagram:

VALUE OF PRODUCTS, LEADING INDUSTRIES, BY STATES: 1909.

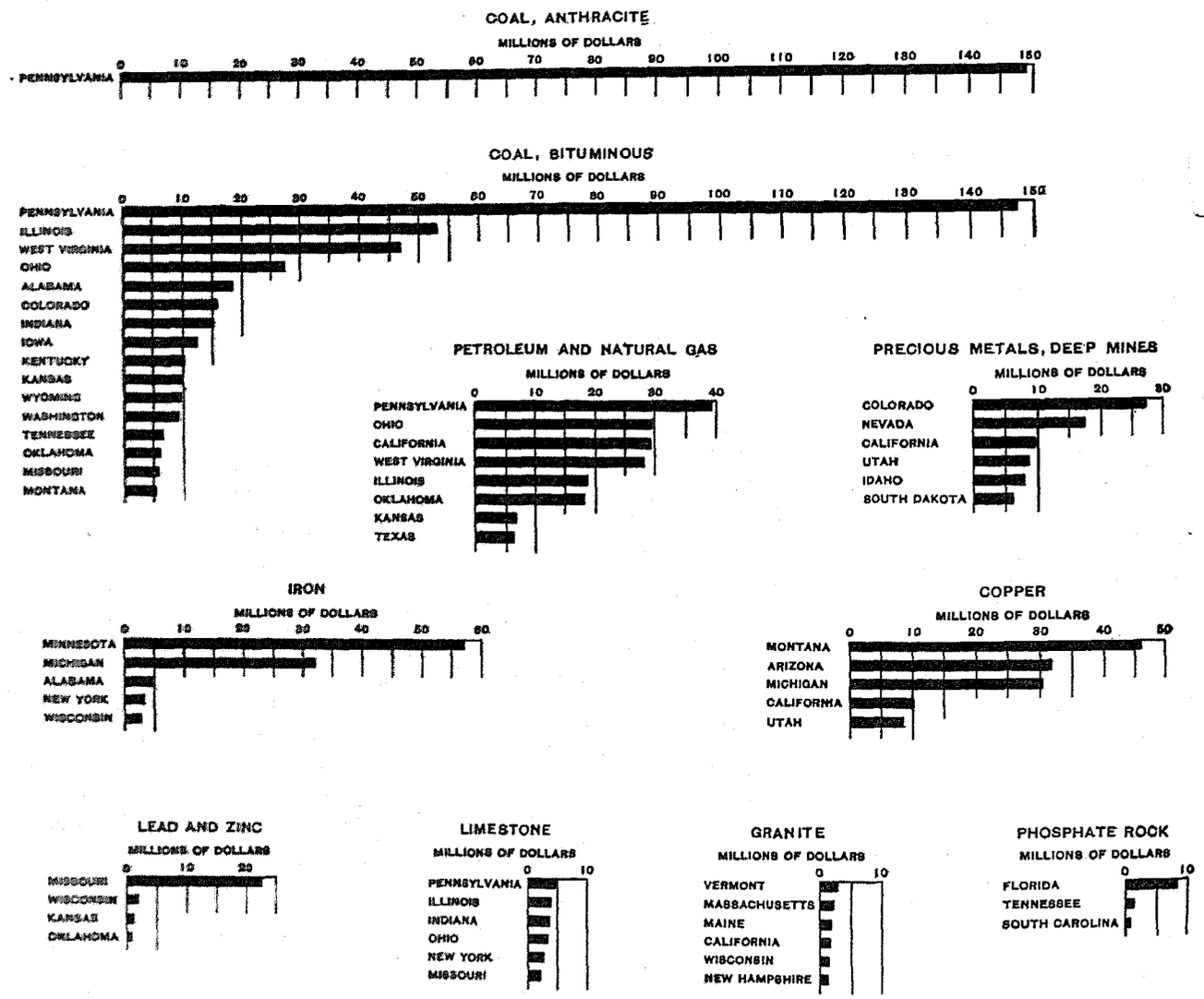


Table 9

INDUSTRY AND STATE.	Number of operators.	WAGE EARNERS (DEC. 15, OR NEAREST REPRESENTATIVE DAY). Number.	Per cent of total.	VALUE OF PRODUCTS. Amount.	Per cent of total.
Coal, anthracite	192	173,504	100.0	$149,180,471	100.0
Pennsylvania	189	173,203	99.9	148,957,894	99.9
Coal, bituminous	3,582	569,789	100.0	427,962,454	100.0
Pennsylvania	989	184,408	32.4	147,466,417	34.5
Illinois	470	74,445	13.1	53,030,545	12.4
West Virginia	397	69,666	12.2	46,929,592	11.0
Ohio	441	44,495	7.8	27,353,663	6.4
Alabama	112	23,479	4.1	18,459,423	4.3
Colorado	86	15,461	2.7	15,782,197	3.7
Indiana	223	22,357	3.9	15,018,123	3.5
Iowa	258	17,625	3.1	12,682,106	3.0
Kentucky	240	19,655	3.4	10,003,481	2.3
Kansas	118	12,791	2.2	9,835,614	2.3
Wyoming	35	7,839	1.4	9,721,134	2.3
Washington	32	6,155	1.1	9,220,793	2.2
Tennessee	85	11,154	2.0	6,988,454	1.6
Oklahoma	56	8,814	1.5	6,185,078	1.4
Missouri	173	9,526	1.7	5,981,034	1.4
Montana	48	4,612	0.8	5,117,444	1.2
Petroleum and natural gas	7,783	29,831	100.0	185,416,684	100.0
Pennsylvania	3,030	7,397	13.6	39,197,475	21.1
Ohio	1,198	5,897	14.8	29,620,959	16.0
California	339	7,007	17.6	29,310,335	15.8
West Virginia	442	7,662	17.8	25,158,087	13.2
Illinois	323	4,959	16.2	18,895,815	10.2
Oklahoma	731	3,906	7.7	17,885,092	9.5
Kansas	217	1,302	3.2	6,981,780	3.6
Texas	163	1,495	2.5	6,391,313	3.4
Copper	181	53,143	100.0	134,616,987	100.0
Montana	35	13,697	25.8	45,909,517	34.1
Arizona	43	11,394	21.4	31,614,116	23.5
Michigan	7	19,922	35.5	30,165,443	22.4
California	9	2,510	4.7	10,104,373	7.5
Utah	22	3,904	6.2	8,432,099	6.3
Iron	176	52,220	100.0	106,947,032	100.0
Minnesota	20	16,218	31.1	57,998,135	53.4
Michigan	24	16,125	30.9	32,108,123	30.1
Alabama	25	5,666	10.8	4,920,149	4.6
New York	14	2,542	4.9	3,095,023	2.9
Wisconsin	6	1,455	2.8	2,972,584	2.8
Precious metals, deep mines	1,694	33,616	100.0	82,295,928	100.0
Colorado	439	7,586	22.6	27,147,957	32.4
Nevada	218	3,818	11.4	17,397,945	21.2
California	395	6,622	19.7	9,690,956	11.6
Utah	198	3,905	11.6	8,541,522	10.2
Idaho	60	3,077	9.2	7,926,602	9.4
South Dakota	13	3,466	10.3	6,120,970	7.3
Precious metals, placer mines	678	4,299	100.0	10,227,252	100.0
California	302	3,073	73.2	8,751,032	85.5
Lead and zinc	977	21,603	100.0	31,383,094	100.0
Missouri	617	16,319	75.5	22,563,528	71.9
Wisconsin	88	1,753	8.1	1,989,907	6.3
Kansas	189	848	3.9	1,059,540	3.4
Oklahoma	47	724	3.4	695,235	2.2
Limestone	1,665	37,695	100.0	29,822,492	100.0
Pennsylvania	311	7,179	19.0	4,733,819	15.9
Illinois	81	3,276	8.7	3,977,359	13.3
Indiana	126	3,724	9.9	3,626,696	12.1
Ohio	144	3,746	9.9	3,393,149	11.3
New York	127	3,194	8.2	2,656,142	8.9
Missouri	144	2,437	6.5	2,027,902	6.8
Granite	797	20,561	100.0	18,907,976	100.0
Vermont	54	2,695	9.9	2,829,522	14.9
Massachusetts	82	2,278	11.1	2,185,986	11.5
Maine	85	2,132	10.4	1,761,891	9.3
California	62	1,318	6.4	1,528,916	8.0
Wisconsin	21	1,448	7.0	1,433,195	7.5
New Hampshire	40	1,306	6.3	1,266,811	6.7
Phosphate rock	51	8,186	100.0	10,781,182	100.0
Florida	26	5,105	62.4	8,468,801	78.7
Tennessee	23	1,725	21.1	1,395,962	12.9
South Carolina	5	1,307	16.0	862,409	8.0

Statistics are given for each of the states where the industry in question is important either by reason of the absolute value of the product or of its proportion of the total for the industry. In most of the industries here shown the production is so concentrated that the states given represent upward of nine-tenths of the entire production, but in the case of the lead and zinc, limestone, and granite industries, the aggregate value of the products reported by the states named falls short of this fraction.

Of the value of the products of the bituminous coal mines in 1909, Pennsylvania contributed more than one-third, and a group of five states—Pennsylvania, West Virginia, Ohio, Indiana, and Illinois—together reported more than two-thirds of the total. Including those just named, the table shows 16 states, situated in all parts of the Union which had a product valued at more than $5,000,000. The anthracite coal production is practically confined to the state of Pennsylvania.

Petroleum and natural gas also show production centers in various parts of the country. Pennsylvania leads, with a little over one-fifth of the total value of products for the industry, but does not report so large a proportion of the total as in the case of coal.

More than one-third of the value of products for the copper industry in 1909 was represented by the product of Montana, while Arizona and Michigan each contributed over one-fifth. More than one-half of the value of products for the iron industry in 1909 was contributed by Minnesota and somewhat less than one-third by Michigan.

In the production of precious metals by placer mining California was the only important state, while nearly one-third of the value of products for deep mines was reported from Colorado and over one-fifth from Nevada. The production of Alaska is not included in the table, which relates exclusively to continental United States. It may, however, be noted that the canvass of mines in Alaska by the Bureau of the Census gave $12,762,000 as the value of the products of placer mining in that territory. The inquiry of 1909 was the first attempt to secure information concerning placer mining in Alaska by census methods. The wide extent of the field and the difficulties of the inquiry lead to the belief that the product reported is considerably short of the actual product of the Alaska placer mines.

The lead and zinc industry is geographically far more closely concentrated than any thus far considered. In 1909 Missouri reported 71.9 per cent of the total value of products of this industry and employed 75.5 per cent of the wage earners engaged therein. The phosphate rock industry shows a marked concentration in the state of Florida, which reported 78.7 per cent of the total value of products and employed 62.4 per cent of all wage earners in the industry. On the other hand, the production of limestone and granite is widely distributed. In the case of the limestone industry, the six states which had a product exceeding $2,000,000 in value together reported but little more than two-thirds of the total value of products; and in the case of the granite industry the six states having a product in excess of $1,000,000 in value reported only 57.5 per cent of the total. In addition the variation in value of products among the states named in the table is much less marked in the case of these industries than in most of the other industries listed.

PERSONS ENGAGED IN MINING INDUSTRIES.

The number of persons engaged in mining industries, by classes, was ascertained as far as possible for December 15 of the year 1909. In those cases, however, where the mines were not in operation on that date, or the time records for that date were not obtainable, the numbers were ascertained for the nearest representative date. In addition to this information, the number of wage earners, without classification, was ascertained for the 15th day of every month.[1]

The whole number of persons engaged in connection with producing mines, quarries, and wells, as reported on December 15, or the nearest representative day, was 1,139,332, of whom 1,065,283 were wage earners. Since the representative day was taken in some other month than December, in many cases, because the mines were not in operation on December 15, as stated above, this number of wage earners is greater than the number actually engaged at any given time. The greatest number simultaneously employed in all producing mines was 1,022,885, this number being reported for November 15. This does not, however, represent the entire number of persons who gave all or a part of their time to mining in 1909. The busiest months do not coincide for all mining industries nor for all mines within a given industry. Mining, moreover, affords some contrast to manufactures with respect to employment. Whereas in the manufacturing cities there is some opportunity for wage earners to pass from one industry where employment is temporarily slack to another where labor is in greater demand, there is rarely sufficient diversity of mining industries in a given locality to permit such a shifting. Furthermore, even within an industry as widespread as bituminous coal mining, distance would largely prevent the employees of a mine temporarily shut down from seeking employment in other coal mines. The total number of wage earners reported for December 15, or the nearest representative day, namely, 1,065,283, may therefore be accepted as less, if anything, than the total number of wage earners who derived a livelihood from mining during the year 1909.

Distribution by sex and age.—Table 10 shows the classification of the persons employed in producing mines on the 15th day of December, or the nearest representative day.

Women were employed only in supervisory and clerical capacities, none being reported as wage earners in mining operations proper. It will be noted, moreover, that the reported number of boys under 16 years of age, 8,151, is less than 1 per cent of the whole number of wage earners employed.

[1] It must be borne in mind that the business year for which returns were obtained did not in all cases coincide with the calendar year. As a result, the total for the month of December includes a few returns for December, 1908, when the business year ended before Dec. 31, 1909. In such cases it was assumed that the number employed on the 15th day of December, 1909, was approximately equal to the number reported for Dec. 15, 1908. The same applies to the figures for other months, some of which were reported for 1908 and others for 1910. The statistics of the number of wage earners must, therefore, be regarded as approximations; they are sufficiently close, however, for purposes of general comparison.

Table 10

CLASS.	PERSONS ENGAGED IN PRODUCING ENTERPRISES: 1909		
	Total.	Male.	Female.
All classes	1,139,332	1,135,528	3,804
Proprietors and officials	49,374	47,931	1,443
Proprietors and firm members	29,922	28,571	1,351
Salaried officers of corporations	5,657	5,577	80
Superintendents and managers	13,795	13,783	12
Clerks and other salaried employees	24,675	22,314	2,361
Wage earners	1,065,283	1,065,283	.....
16 years of age and over	1,057,132	1,057,132	.....
Under 16 years of age	8,151	8,151	.....

Distribution by industrial status.—Table 11 shows for all mining industries and for the nine most important industries separately the distribution of the persons engaged in producing enterprises according to general character of occupation or industrial status, together with the percentage that each class forms of the total.

Table 11

INDUSTRY.	PERSONS ENGAGED IN PRODUCING ENTERPRISES: 1909						
	Number.				Per cent of total.		
	Total.	Proprietors and officials.	Clerks and other salaried employees.	Wage earners.	Proprietors and officials.	Clerks and other salaried employees.	Wage earners.
All industries	1,139,332	49,374	24,675	1,065,283	4.3	2.2	93.5
Coal	770,681	12,935	14,453	743,293	1.7	1.9	96.4
Anthracite	178,004	1,315	3,185	173,504	0.7	1.8	97.5
Bituminous	592,677	11,620	11,268	569,789	2.0	1.9	96.1
Petroleum and natural gas	62,172	19,353	2,988	39,831	31.1	4.8	64.1
Copper	55,258	661	1,454	53,143	1.1	2.7	96.2
Iron	55,176	1,109	1,837	52,230	2.1	3.3	94.6
Precious metals	43,191	4,508	868	37,815	10.4	2.0	87.6
Lead and zinc	24,397	2,525	269	21,603	10.4	1.1	88.5
Limestone	41,029	2,645	689	37,695	6.4	1.7	91.9
Granite	22,211	1,248	402	20,561	5.6	1.8	92.6
Phosphate rock	8,573	214	173	8,186	2.5	2.0	95.5

Of the whole number of persons engaged in producing enterprises, 4.3 per cent were proprietors and officials, 2.2 per cent were clerks and other salaried employees, and 93.5 per cent were wage earners. The proportion of proprietors and officials ranges, among the industries given, from 1.1 per cent in the copper industry to 31.1 per cent in the petroleum and natural gas industry. Large proportions for proprietors and officials occur also in the production of the precious metals and of lead and zinc. In the anthracite branch of the coal industry proprietors and officials formed only 0.7 per cent of all persons engaged in the industry. The range of difference with respect to the proportion of clerks is much less than with respect to the proportion of proprietors and officials.

Proprietors performing manual labor.—Table 12 gives, for the principal mining industries, the number of proprietors and firm members compared with the number and percentage who performed manual labor.

Table 12

INDUSTRY.	PROPRIETORS AND FIRM MEMBERS IN PRODUCING ENTERPRISES: 1909		
	Total.	Performing manual labor.	
		Number.	Per cent.
All industries	**29,922**	**8,861**	**29.6**
Coal, bituminous	3,734	1,713	45.8
Petroleum and natural gas	16,213	2,155	13.3
Precious metals:			
Placer mines	961	673	70.8
Deep mines	2,011	951	47.3
Lead and zinc	1,947	1,171	60.1
Limestone	1,634	640	39.2
Granite	730	318	43.6

Mine operators of the old type who operate their mines without the assistance of hired help or with little help are still quite numerous, as appears from the fact that out of a total of 29,922 proprietors and firm members in 1909, 8,861, or nearly three-tenths, were personally performing manual labor in or about their enterprises. The industries in which proprietors of this type were relatively the most numerous include bituminous coal mining, in which 45.8 per cent of the proprietors and firm members were performing manual labor; lead and zinc mining, and placer mining (surface gold washing), in each of which industries a majority of the proprietors were working in their own mines; and deep gold and silver mines, in which nearly one-half of all proprietors belonged to this class. There are also a considerable number of proprietors and firm members performing manual labor in the petroleum and natural gas industry, but as the whole number of proprietors and firm members is very large, they constitute a comparatively small percentage of the total.

Wage earners by occupation.—Table 13 gives for all mining industries and for the nine most important industries separately the number of wage earners in producing mines classified by specific occupation and by age group, distinguishing those who work above and those who work below ground.

Table 13

CLASS OF WAGE EARNERS.	All mining industries.	COAL.			Petroleum and natural gas.	Copper.	Iron.	Precious metals.	Lead and zinc.	Limestone.	Granite.	Phosphate rock.
		Total.	Bituminous.	Anthracite.								
All wage earners (producing enterprises only)	**1,065,283**	**743,293**	**569,789**	**173,504**	**39,831**	**53,143**	**82,220**	**37,815**	**21,662**	**37,695**	**20,582**	**8,196**
Men 16 years of age and over	1,057,132	736,325	566,068	170,257	39,820	53,077	81,741	37,803	21,573	37,572	20,474	8,129
Engineers, firemen, mechanics, etc	103,529	42,696	29,896	12,272	27,963	6,860	7,973	5,710	3,745	5,224	1,921	1,069
Miners, miners' helpers, quarrymen, and stonecutters	627,513	467,179	384,023	83,156	.....	28,570	24,925	21,855	12,552	25,748	14,200	4,275
All other wage earners	326,100	227,948	152,219	74,829	12,757	17,647	19,742	10,238	5,276	8,600	4,253	2,785
Boys under 16 years of age	8,151	6,968	3,721	3,247	11	66	479	12	89	123	87	67
Above ground, total	366,962	142,343	94,390	48,733	39,831	22,481	24,889	15,333	8,962	27,695	20,582	7,993
Men 16 years of age and over	361,938	138,792	93,273	45,519	39,820	22,420	24,509	15,324	8,957	27,572	20,474	7,926
Engineers, firemen, mechanics, etc	93,586	34,141	24,389	9,752	27,963	6,236	6,397	5,112	3,284	5,224	1,921	1,069
Miners, miners' helpers, quarrymen, and stonecutters	78,280	.....	.....	.....	.....	1,260	4,736	2,870	427	25,748	14,200	4,117
All other wage earners	189,902	104,651	68,884	35,767	12,757	14,913	13,376	7,342	4,626	8,600	4,253	2,692
Boys under 16 years of age	5,024	4,051	817	3,234	11	61	380	9	25	123	87	67
Below ground, total	698,321	600,950	475,399	124,751	.....	30,662	57,341	22,482	13,541	.....	.....	203
Men 16 years of age and over	695,194	597,533	472,795	124,738	.....	30,657	57,172	22,479	13,538	.....	.....	203
Engineers, firemen, mechanics, etc	9,943	7,967	5,437	2,530	.....	622	476	598	461	.....	.....	.....
Miners and miners' helpers	549,133	467,179	384,023	83,156	.....	27,301	20,190	18,985	12,125	.....	.....	203
All other wage earners	136,138	122,387	83,335	39,052	.....	2,734	6,506	2,896	1,250	.....	.....	3
Boys under 16 years of age	3,117	2,917	2,904	13	.....	5	169	3	3	.....	.....	.....

This table gives further information in regard to the employment of boys under 16 years of age. Only eight-tenths of 1 per cent of the wage earners in all mining industries were boys under 16 years of age, and of these only three-eighths were employed below ground. The largest number of boys under 16 years of age (3,721) were employed in bituminous coal mining, though 3,247 were employed in the anthracite coal-mining industry, where they formed nearly 2 per cent of the whole number of wage earners—a higher percentage than in any other industry shown in the table. Most of the boys in the anthracite coal industry, however, were employed above ground. In none of the other industries shown in the table did the proportion of boys under 16 years of age reach 1 per cent of the whole number of wage earners.

Miners and miners' helpers, quarrymen, and stonecutters constitute the most numerous class of wage earners, forming, in 1909, 58.9 per cent of the whole number employed in all industries combined. The proportion of miners and miners' helpers reached 67.4 per cent in the bituminous coal industry and 47.9 per cent in anthracite coal mining. It was about the same in the iron mines, but somewhat greater in the other industries employing miners. In the limestone and granite industries quarrymen and stonecutters are naturally the largest numerical group.

The wage earners included under the heading of "Engineers, firemen, mechanics, etc.," constituted 9.7 per cent of all wage earners employed in mining in 1909. The proportion was lowest in the coal industry, where such wage earners formed 5.7 per cent

of the total, and highest in the petroleum and natural gas industry, where they constituted 67.9 per cent. The miscellaneous group "All other wage earners," which is composed mostly of unskilled laborers, comprised 30.6 per cent of all wage earners employed. The proportion in this class was largest in anthracite coal mining (43.1 per cent) and smallest in the granite industry (20.7 per cent).

In all mining industries about one-third of the wage earners (34.4 per cent) were employed above ground and about two-thirds (65.6 per cent) below ground. The two branches of the coal-mining industry have a larger proportion of their wage earners below ground than any other mining industry. In the phosphate rock industry only 3.2 per cent of the wage earners were employed below ground, while three of the industries named in the table—the petroleum and natural gas, limestone, and granite industries—are exclusively surface industries.

Contract work.—In addition to the work performed by wage earners regularly engaged in mining and by the proprietors who contribute their own labor to the operation of the mines, a portion of the work incident to mining is done by contract. The number of wage earners employed by contractors can not be ascertained, because the work is temporary and the same men after completing one job are shifted to another place. A special form of contract work common in certain metalliferous mines is the working of mines in return for a share of the product. Under this system a miner "leases" a block in a mine on a royalty basis; the product is delivered by him to the mine owner, who disposes of it, deducts the royalty, and pays the "lessee" his share. In the operation of petroleum and natural gas wells, little labor is required. This condition has called into existence a special class of mechanics who contract with individual operators to take care of their properties, devoting to each property only a part of their time.

The relative importance of work done under contract, as compared with the work performed by regular wage earners, is shown by a comparison of the total amount paid out in wages with the total expenditure for contract work. While the total wages paid in the United States in 1909 amounted to $586,774,000, the total expenditure for contract work amounted to $28,888,000, which included $3,798,000 paid to miners compensated by a share of the product, and $1,035,000 paid to part-time men for taking care of petroleum and natural gas wells. There were 3,261 operators, or 16.4 per cent of the total number in the United States, whose properties were operated exclusively by contract work, as defined above. This form of operation was more or less general with operators of petroleum and natural gas wells, of whom 3,021, or 38.8 per cent, belonged to this class. Next in point of numbers were 104 operators of deep mines of precious metals, or 6.5 per cent of all operators engaged in that industry, who employed contract labor exclusively. In all other industries combined this class included only 136 operators, or 1.3 per cent of the total.

Number of persons employed, by months.—Table 14 shows the number of wage earners reported for the 15th of each month in producing enterprises in all mining industries combined and in coal mining separately, the latter industry, as already noted, including nearly 70 per cent of all wage earners in producing enterprises.

Table 14 WAGE EARNERS IN PRODUCING ENTERPRISES: 1909

MONTH.	All mining industries.		Coal.		All other mining industries.	
	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.
January	940,119	91.9	691,244	94.8	248,875	80.7
February	936,418	91.5	686,322	94.1	250,096	81.2
March	943,493	92.2	679,791	93.2	263,702	85.5
April	928,563	90.8	649,870	89.1	278,693	90.4
May	937,002	91.6	646,592	88.7	290,410	94.2
June	949,615	92.8	652,894	89.5	296,721	96.2
July	961,940	94.0	659,434	90.4	302,506	98.1
August	971,263	95.0	667,146	91.5	304,117	98.6
September	993,075	97.1	685,234	94.0	307,841	99.8
October	1,013,326	99.1	704,939	96.7	308,387	100.0
November	1,022,885	100.0	720,341	98.8	302,544	98.1
December	1,013,895	99.1	729,273	100.0	284,622	92.3

For all industries combined the largest number of wage earners, 1,022,885, was reported for November and the smallest, 928,563, or 90.8 per cent of the maximum, for April. The figure for April, however, is only slightly below the figures for the three preceding months of the year. From April to November the number increased gradually, but December showed a slight falling off. In coal mining the month of greatest activity was December, and that of least activity was May, when the number employed was equal to 88.7 per cent of the number employed in December. From May to December there was a steady increase in the number of wage earners employed. It should be noted that the figures in this table furnish only a most unsatisfactory indication of the regularity of employment. In the coal-mining industry in particular many mines operate only part of the days each week or each month, and while the number of wage earners on the rolls on the 15th of the month (which is more often reported than the number actually drawing pay) may be substantially the same from month to month, yet the average number of days each miner works during the year may be much less than the possible number of working days. In other words, there is a good deal of unemployment so distributed through the year as not to cause much fluctuation in the monthly returns.

For the principal industries Table 15 shows the month of maximum and of minimum employment, the number reported for each of these months, and the percentage which the minimum represents of the maximum.

Table 15 WAGE EARNERS IN PRODUCING ENTERPRISES: 1909

INDUSTRY	Maximum.		Minimum.		
	Month.	Number.	Month.	Number	Per cent of maximum
All industries	Nov.	1,622,385	Apr.	998,583	90.6
Coal	Dec.	729,273	May	646,362	88.7
Anthracite	Mar.	179,025	Aug.	165,740	95.8
Bituminous	Dec.	560,199	May	478,455	85.4
Petroleum and natural gas	Nov.	39,972	Feb.	33,521	83.9
Copper	Oct.	53,148	Dec.	50,151	94.4
Iron	Oct.	51,065	Jan.	43,491	85.2
Precious metals	July	33,899	Dec.	30,751	90.8
Lead and zinc	Dec.	18,374	Jan.	15,330	83.4
Limestone	Sept.	37,209	Jan.	17,908	48.1
Granite	Sept.	21,899	Jan.	13,732	62.7
Phosphate rock	July	8,114	Oct.	7,650	93.8

The coal industry is divided in this table into its two constituent branches. Anthracite mining shows greater regularity of employment from month to month than bituminous mining. It will be noted that the months of maximum and minimum employment for the two branches do not correspond. For the remaining industries the month of maximum employment is generally in the fall of the year except in the case of the production of precious metals and of phosphate rock, where it is July. The quarrying industries, limestone and granite quarrying, show a wide divergence between the months of maximum and minimum employment, due to the fact that they are surface industries and much affected by weather conditions. For both industries the smallest number of wage earners was reported for January.

Prevailing hours of labor.—In Table 16 producing mines and quarries have been classified according to the prevailing hours of labor per day in each enterprise. Petroleum and natural gas wells are not included in this table, because many of them are operated without hired labor, or by men who give to each enterprise only a part of their time. Neither are those enterprises included in which all labor is performed by contractors. The table shows the percentage of the total number of enterprises falling into each group, and a percentage distribution in which each enterprise has been given a weight according to the total number of wage earners employed on December 15, 1909, or the nearest representative day. It should be clearly borne in mind that these latter percentages do not show precisely the proportion of the total number of wage earners working the specified number of hours per day, since in many cases some of the employees work a greater or less number of hours than those generally prevailing in the enterprise. The table shows that about one-half of the enterprises have adopted the 8-hour day, while the other half are operated on a 9-hour or 10-hour basis. There is considerable variation in this respect among the several mining industries. The prevailing hours are 8 or less per shift in more than nine-tenths of the deep gold and silver mines, more than five-sixths of the copper mines, about three-fourths of the lead and zinc mines, more than two-thirds of the bituminous coal mines, about three-fifths of the placer mines, and slightly less than one-half of the granite quarries. The 9-hour shift is predominant in anthracite coal mines and the 10-hour day in iron mines, limestone quarries, and the phosphate rock industry. In very few mines do the prevailing hours exceed 10 per shift, the only conspicuous exception being the phosphate rock industry, in which 11 or 12 hours per shift constitute the prevailing hours for over one-fourth of the enterprises.

Table 16

INDUSTRY AND HOURS PER DAY.	ENTERPRISES. Number.	ENTERPRISES. Per cent.	Per cent distribution of enterprises weighted according to number of wage earners.
All industries	12,293	100.0	100.0
8 hours and under	5,576	45.2	44.5
9 hours	1,823	14.9	28.9
10 hours	4,393	35.9	27.4
11 hours	31	0.3	0.3
12 hours	70	0.6	0.9
Coal, anthracite	331	100.0	100.0
8 hours and under	33	9.7	1.7
9 hours	280	84.9	97.9
10 hours	10	14.1	0.4
12 hours	1	0.3	(1)
Coal, bituminous	4,294	100.0	100.0
8 hours and under	2,922	68.2	55.5
9 hours	554	12.9	13.9
10 hours	804	18.8	29.7
12 hours	4	0.1	0.9
Copper	209	100.0	100.0
8 hours	170	81.3	81.3
9 hours	17	8.3	12.5
10 hours	12	6.0	5.3
12 hours	1	0.5	0.3
Iron	262	100.0	100.0
8 hours	15	5.1	3.9
9 hours	19	6.5	5.9
10 hours	254	88.7	90.4
11 hours	4	1.4	1.5
12 hours	1	0.3	0.3
Precious metals, deep mines	1,203	100.0	100.0
8 hours and under	1,102	91.6	95.4
9 hours	49	3.8	2.7
10 hours	45	3.5	1.7
12 hours	16	1.2	0.2
Precious metals, placer mines	425	100.0	100.0
8 hours and under	293	68.4	63.5
9 hours	46	9.5	12.2
10 hours	128	29.5	21.9
11 hours	4	0.5	1.6
12 hours	9	1.9	1.7
Lead and zinc	227	100.0	100.0
8 hours and under	227	74.9	62.1
9 hours	230	18.1	5.9
10 hours	70	8.7	9.6
11 hours	1	0.1	0.2
12 hours	9	1.1	0.1
Limestone	1,544	100.0	100.0
8 hours and under	120	7.8	3.4
9 hours	207	13.1	6.3
10 hours	1,201	78.7	89.5
11 hours	4	0.3	0.4
12 hours	2	0.1	1.1
Granite	697	100.0	100.0
8 hours	332	48.0	54.6
9 hours	171	24.7	18.5
10 hours	188	27.2	26.7
11 hours	1	0.1	0.2
Phosphate rock	63	100.0	100.0
8 hours	1	1.4	(1)
10 hours	50	72.5	67.5
11 hours	2	11.6	11.6
12 hours	10	14.5	20.7

[1] Less than one-tenth of 1 per cent.

LAND TENURE.

In mining, as in agriculture, land is the source from which wealth is drawn, and the control of land is an important factor in mining operations. The Thirteenth Census was the first at which the inquiry into land tenure was extended to all branches of the mining industry. Table 17 gives, for all mining industries combined and for the nine most important industries separately, statistics of the land controlled, distinguishing the character of the land and also the form of tenure.

Table 17 — ACREAGE OF LAND CONTROLLED BY PRODUCING ENTERPRISES: 1909

INDUSTRY.	All land.				Mineral and oil land.			Timber land.	Other land.
	Total.	Owned.	Held under lease.	Per cent owned.	Total.	Owned.	Held under lease.		
All industries	[1] **24,215,611**	**9,389,121**	**14,838,179**	**38.8**	[2] **21,414,662**	**6,920,673**	**14,504,964**	**1,138,901**	**1,662,048**
Coal	[1] 8,182,749	5,952,110	2,242,328	.....	[2] 6,847,545	4,732,556	2,125,964	435,216	899,988
Anthracite	[1] 465,134	316,867	159,956	68.1	[2] 274,359	183,144	102,190	71,851	118,924
Bituminous	7,717,615	5,635,243	2,082,372	73.0	6,573,186	4,549,412	2,023,774	363,365	781,064
Petroleum and natural gas	12,694,838	686,268	12,008,570	5.4	12,694,838	686,268	12,008,570	.....	.....
Copper	275,598	270,771	4,827	98.2	126,851	122,798	4,053	57,781	90,966
Iron	1,313,214	1,064,227	248,987	81.0	387,008	282,661	104,947	456,682	468,924
Precious metals	588,263	461,158	127,105	78.4	469,455	397,097	72,358	33,745	85,063
Lead and zinc	125,322	102,569	22,753	81.8	103,555	81,418	22,137	10,120	11,647
Limestone	128,495	96,084	32,411	74.8	88,152	58,774	29,378	9,176	31,167
Granite	51,398	42,960	8,438	83.6	39,548	32,035	7,513	3,266	8,584
Phosphate rock	340,697	327,726	12,971	96.2	243,221	230,405	12,816	92,580	4,896

[1] Exclusive of 11,689 acres reported both in acreage owned and acreage held under lease.
[2] Exclusive of 10,975 acres reported both in acreage owned and acreage held under lease.

The total acreage of all land controlled by producing enterprises was 24,216,000 acres. Of course, not all of this area was in actual use, large tracts being held in reserve. The greater part of this land was mineral and oil land, but there were 1,139,000 acres of timber land and 1,662,000 acres of other land. Under these two headings are comprised land which had not been prospected and whose mineral resources were still unknown, as well as some land used for building and other purposes.

In comparing the statistics of land controlled for different industries or different states, it should be noted that the area of land is not necessarily an index of the importance of the holdings, as some land is far more rich in minerals than other land.

Of the total area controlled by operators of mining enterprises in 1909, more than one-half was connected with the petroleum and natural gas industries. Of the remainder, by far the largest part was reported for the coal industry. The holdings of the bituminous mines are far more extensive in comparison with the value of the products of those mines than those of the anthracite mines. The holdings of land by operators of iron mines are also very considerable. Some indication of the amount of reserve land held in the different industries is afforded by the proportion reported under the description of "Timber land" and "Other land." This proportion is greatest in the iron industry.

Of the total amount of land controlled by mine operators, 38.8 per cent was owned by the operators themselves and the remainder held under lease. The petroleum and natural gas industry, in which most of the land is held under lease, presents a marked contrast to all the other industries shown in the table. Excluding the land controlled in the petroleum and natural gas industry, operators in other mining industries controlled 11,521,000 acres, of which 8,703,000 acres, or 75.5 per cent, were owned by the operators. The two industries showing the widest departure from this proportion are the copper industry, in which the operators owned 98.2 per cent of the land controlled, and the phosphate rock industry, where the proportion of land owned was 96.2 per cent. The proportions owned in the coal industry and its two branches—72.7 per cent for the industry as a whole, 68.1 per cent for the anthracite branch, and 73 per cent for the bituminous branch—fell somewhat below the proportion given above for all mining industries exclusive of the petroleum and natural gas industry.

FORM OF ORGANIZATION.

Table 18 on the next page has for its purpose the presentation of conditions with respect to the form of organization of producing mining enterprises for all mining industries combined and the nine leading industries separately.

The most important distinction brought out by the table is that between corporate and all other forms of organization. Among 19,915 operators of producing mines, quarries, and wells, 7,041, or 35.4 per cent, were corporations. These incorporated enterprises,

however, employed 90.6 per cent of the wage earners engaged in mining enterprises, and reported 91.4 per cent of the total value of products. Individuals formed 32.1 per cent of the whole number of operators, but they employed only 3.9 per cent of the wage earners and are credited with only 3 per cent of the total value of products. The proportions for firms differ but little from those for individuals, being slightly less in the case of the number of operators and slightly greater in the case of the number of wage earners and the value of products. Moreover, it may be noted that while the average value of products was $160,832 per operator for corporations, it was only $9,136 for firms and only $5,723 for individuals.

Corporations constituted a majority of the operators in the phosphate rock industry (88.2 per cent), the iron industry (73.3 per cent), the copper industry (67.4 per cent), and the coal industry (52.6 per cent). In the copper industry corporations employed 99 per cent of the total number of wage earners. Other industries where a very large percentage of the wage earners were employed by corporations are iron mining (98.1 per cent), the phosphate rock industry (95.8 per cent), and coal mining (93.6 per cent). More than 90 per cent of the total value of products in the mining industry as a whole was credited to corporations. The largest percentages for the individual industries were as follows: The iron industry, 99.6 per cent; the copper industry, 99.1 per cent; the phosphate rock industry, 96.4 per cent; the coal-mining industry, 94.4 per cent; and the precious metal industries, 92.2 per cent. The two quarrying industries—the limestone and granite industries—are the only ones shown in the table in which as much as 25 per cent of the total value of products is credited to other than corporate enterprises.

Table 18

INDUSTRY AND FORM OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909				PER CENT OF TOTAL.		
	Number of operators.	Number of wage earners.	Value of products.		Number of operators.	Wage earners.	Value of products.
			Total.	Per operator.			
All industries	19,915	1,065,283	$1,236,410,322	$62,125	100.0	100.0	100.0
Individual	6,387	41,908	36,551,114	5,723	32.1	3.9	3.0
Firm	6,362	50,777	57,209,629	9,136	31.4	4.8	4.7
Corporation	7,041	965,483	1,132,418,758	160,832	35.4	90.6	91.6
Other	225	7,115	12,230,820	54,359	1.1	0.7	0.9
Coal	3,695	743,293	$577,142,995	$156,193	100.0	100.0	100.0
Individual	1,958	17,475	10,490,668	9,915	28.6	2.4	1.8
Firm	664	24,699	17,111,132	25,776	18.0	3.3	3.0
Corporation	1,942	695,985	544,895,641	280,585	52.6	93.6	94.4
Other	31	5,134	4,656,694	150,197	0.8	0.7	0.8
Petroleum and natural gas	7,793	29,831	$185,418,694	$23,793	100.0	100.0	100.0
Individual	2,298	2,020	9,662,086	4,204	29.5	5.1	5.2
Firm	3,360	3,085	18,954,965	5,641	43.1	7.7	10.2
Corporation	1,966	32,636	149,356,498	75,971	25.2	81.9	80.6
Other	169	2,090	7,441,115	44,030	2.2	5.3	4.0
Copper	121	53,143	$134,616,987	$326,139	100.0	100.0	100.0
Individual	26	168	163,908	6,304	16.3	0.3	0.1
Firm	26	344	1,628,851	29,155	16.3	0.7	0.8
Corporation	109	52,631	133,414,248	1,223,984	67.4	99.0	99.1
Iron	176	52,239	$106,947,982	$607,654	100.0	100.0	100.0
Individual	23	491	222,946	9,693	13.1	0.9	0.2
Firm	24	536	201,411	8,392	13.6	1.0	0.2
Corporation	129	51,213	106,522,725	825,757	73.3	98.1	99.6

INDUSTRY AND FORM OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909				PER CENT OF TOTAL.		
	Number of operators.	Number of wage earners.	Value of products.		Number of operators.	Wage earners.	Value of products.
			Total.	Per operator.			
Precious metals	2,282	37,815	$94,123,209	$42,148	100.0	100.0	100.0
Individual	622	2,561	3,238,424	5,190	27.3	6.8	3.4
Firm	674	2,748	3,897,483	5,851	29.5	7.4	4.2
Corporation	967	32,232	86,730,459	89,804	42.3	85.2	92.2
Other	19	269	166,835	14,094	0.8	0.5	0.2
Lead and zinc	977	21,602	$21,363,694	$21,152	100.0	100.0	100.0
Individual	89	779	824,504	9,264	9.1	3.6	2.6
Firm	322	2,926	3,691,589	6,899	33.4	13.5	11.5
Corporation	566	17,898	26,267,601	73,568	57.5	82.9	85.9
Limestone	1,695	27,695	$23,932,492	$17,217	100.0	100.0	100.0
Individual	911	7,791	4,191,633	4,290	54.7	28.7	14.6
Firm	295	3,178	3,499,341	11,825	17.7	13.7	11.7
Corporation	451	24,551	22,061,746	49,017	27.1	88.1	73.9
Other	8	185	182,748	12,844	0.5	0.5	0.7
Granite	797	20,541	$18,997,976	$23,871	100.0	100.0	100.0
Individual	323	3,745	3,029,150	9,378	40.7	18.2	16.0
Firm	166	3,225	2,997,939	17,879	22.5	15.7	15.8
Corporation	215	13,490	12,923,239	60,107	30.4	65.6	68.0
Other	3	101	77,849	25,950	0.4	0.5	0.4
Phosphate rock	51	8,126	$18,731,192	$211,396	100.0	100.0	100.0
Firm	6	349	350,207	58,368	11.8	4.2	3.6
Corporation	45	7,840	18,381,085	230,953	88.2	95.8	96.4

Number of stockholders.—The law required the Bureau of the Census to collect statistics of the number of stockholders of corporations. The following table presents a summary of the returns from corporations, showing the number of their stockholders, separately for producing and nonproducing enterprises, and for each of the principal industries in parallel columns with the amount of capital invested reported by the same enterprises. It is probable that the number of stockholders includes many duplications, as the same person may own stock in many corporations. The figures are nevertheless instructive, showing as they do that the ownership of stock in mining companies was very widely diffused. The total number of stockholders reported by all companies exceeded 1,100,000, of whom nearly 800,000 were interested in producing enterprises, and over 300,000 in nonproducing enterprises.

Table 19

INDUSTRY.	ALL ENTERPRISES.			PRODUCING ENTERPRISES.			NONPRODUCING ENTERPRISES.		
	Number of incorporated companies.	Stockholders.	Capital.	Number of incorporated companies.	Stockholders.	Capital.	Number of incorporated companies.	Stockholders.	Capital.
All industries	[1] 9,434	1,135,538	$3,420,468,488	[1] 7,042	796,176	$3,153,157,482	2,392	339,362	$267,311,006
Coal:									
Anthracite	111	21,285	241,660,814	105	21,255	241,638,086	6	30	22,728
Bituminous	1,568	108,249	1,036,229,028	1,837	106,743	1,026,875,053	31	1,506	9,353,975
Petroleum and natural gas	2,175	175,759	566,958,151	1,966	154,976	553,649,356	209	20,783	13,308,795
Iron	[1] 145	78,699	304,569,827	[1] 129	78,255	299,862,084	16	444	4,707,743
Copper	122	120,567	398,980,258	109	113,582	297,906,481	13	6,985	11,073,777
Precious metals:									
Deep mines	2,766	475,988	644,064,683	820	191,694	423,407,430	1,946	284,294	220,657,253
Placer mines	215	12,412	54,334,850	156	7,660	51,558,680	59	4,752	2,776,170
Lead and zinc	401	24,251	60,652,437	366	22,769	59,618,457	35	1,482	1,033,980
Structural materials	1,124	83,150	114,390,123	1,107	82,161	113,532,258	17	989	857,865
Phosphate rock	45	972	30,380,413	45	972	30,380,413	.....	.....	.....
Sulphur	4	92	5,293,900	4	92	5,293,900	.....	.....	.....
All other industries	458	34,114	52,954,004	398	16,017	49,435,284	60	18,097	3,518,720

[1] Includes 1 not operated by incorporated company, in order to avoid disclosing individual operations.

SCALE OF PRODUCTION.

The tendency toward concentration in the mining industries can be measured by a classification of mine operators according to the number of wage earners employed or according to the value of the products per operator.

Classification according to number of wage earners.—Table 20, on the next page, gives, for all mineral industries combined and for the most important individual industries, a classification of producing enterprises according to the number of wage earners employed, and shows for each class the number of operators and the number of wage earners. It does not include those mines and quarries which were worked on contract or for a share of the product, nor does it include the petroleum and gas wells which were cared for by part-time employees.

It is worthy of note that the most numerous type of mine operator is the small producer, about three-fifths of all operators employing only from 1 to 20 men each, while more than one-tenth of all operators employed no wage earners at all. On the other hand, more than one-half of the total number of mine workers were employed by operators employing more than 500 men each, although such operators constituted only 1.7 per cent of the total number of operators. The degree of concentration varies in different industries. In anthracite coal mining over five-sixths of all wage earners were employed by the 18 largest operators, each of whom employed 1,000 or more men. Copper mining follows next, three-fourths of the wage earners in this industry being employed by the 12 largest operators, with a force of over 1,000 men each. Iron mining holds the third place, with 9 operators of this class employing more than one-half of the wage earners. There is also a large degree of concentration in bituminous coal mining, where 77 operators of this class, constituting 2.2 per cent of the total number, employed nearly one-half of the wage earners. In the production of petroleum and natural gas the degree of concentration is not as high as in the mining of coal, iron, and copper; the 8 largest operators, however, employed over two-fifths of the wage earners. On the other hand, in precious metal mining, lead and zinc mining, and stone quarrying, small-scale production is still the predominant type.

Table 20

INDUSTRY AND NUMBER OF WAGE EARNERS[1] PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Wage earners.[1]	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	16,657	100.0	1,965,283	100.0
No wage earners	2,187	13.1		
1 to 5	6,292	37.8	14,788	1.4
6 to 20	3,837	23.0	43,963	4.0
21 to 50	1,973	11.8	64,327	6.0
51 to 100	983	5.9	71,645	6.7
101 to 500	1,105	6.6	242,999	22.8
501 to 1,000	155	0.9	118,191	10.3
Over 1,000	125	0.8	518,360	48.7
Anthracite coal	192	100.0	173,504	100.0
No wage earners	7	3.6		
1 to 5	39	20.3	102	0.1
6 to 20	28	14.6	317	0.2
21 to 50	19	9.9	612	0.3
51 to 100	19	9.9	1,459	0.8
101 to 500	44	22.9	12,982	7.6
501 to 1,000	18	9.4	11,857	6.8
Over 1,000	18	9.4	147,975	84.8
Bituminous coal	3,478	100.0	569,789	100.0
No wage earners	23	0.7		
1 to 5	600	17.3	2,162	0.4
6 to 20	939	27.0	10,183	1.8
21 to 50	575	16.5	18,988	3.3
51 to 100	466	13.4	33,620	5.9
101 to 500	693	19.9	156,823	27.5
501 to 1,000	163	3.6	73,517	12.9
Over 1,000	77	2.2	274,896	48.2
Petroleum and natural gas	4,772	100.0	29,631	100.0
No wage earners	1,324	27.7		
1 to 5	2,749	57.6	4,875	12.2
6 to 20	519	10.9	5,313	13.3
21 to 50	104	2.2	3,144	7.9
51 to 100	46	0.8	2,823	7.1
101 to 500	28	0.6	5,667	14.3
Over 500	3	0.2	17,969	45.2
Copper	158	100.0	53,143	100.0
No wage earners	8	5.1		
1 to 5	48	30.4	144	0.3
6 to 20	30	19.0	300	0.7
21 to 50	17	10.8	579	1.1
51 to 100	16	10.1	1,248	2.3
101 to 500	19	12.0	4,998	9.4
501 to 1,000	8	5.1	5,508	10.4
Over 1,000	12	7.6	40,366	75.8

INDUSTRY AND NUMBER OF WAGE EARNERS[1] PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Wage earners.[1]	
	Number.	Per cent distribution.	Number.	Per cent distribution.
Iron	173	100.0	32,230	100.0
No wage earners	4	2.3		
1 to 5	12	6.9	39	0.1
6 to 20	30	17.4	374	0.7
21 to 50	35	20.2	1,227	3.8
51 to 100	24	13.9	1,742	5.3
101 to 500	49	28.3	11,299	21.8
501 to 1,000	9	5.2	7,132	14.7
Over 1,000	9	5.2	30,317	58.6
Precious metals	2,169	100.0	37,825	100.0
No wage earners	378	17.4		
1 to 5	913	42.1	2,339	6.2
6 to 20	527	24.3	5,992	15.8
21 to 50	203	9.4	6,949	17.5
Over 50	148	6.8	22,525	60.9
Lead and zinc	260	100.0	21,620	100.0
No wage earners	138	14.9		
1 to 5	226	30.9	604	2.8
6 to 20	268	29.4	3,020	14.2
21 to 50	134	20.4	5,913	27.4
51 to 100	39	4.1	2,681	12.4
101 to 500	5	0.5	925	2.8
501 to 1,000	4	0.4	3,245	15.5
Over 1,000	3	0.3	4,317	20.9
Limestone	1,642	100.0	37,695	100.0
No wage earners	96	5.9		
1 to 5	395	24.4	1,433	3.8
6 to 20	525	32.0	6,992	18.4
21 to 50	283	17.2	9,292	24.4
51 to 100	194	8.3	7,422	19.7
Over 100	69	4.2	12,443	33.7
Granite	794	100.0	20,361	100.0
No wage earners	36	1.4		
1 to 5	199	25.3	628	3.1
6 to 20	265	37.6	3,009	14.9
21 to 50	122	15.8	4,207	21.3
51 to 100	53	7.5	3,659	18.6
Over 100	45	6.4	8,857	42.1
Phosphate rock	51	100.0	6,186	100.0
1 to 5 wage earners	2	3.9	17	0.2
6 to 20	11	21.6	179	2.7
21 to 50	11	21.6	463	5.7
51 to 100	6	11.8	1,024	12.3
Over 100	21	41.2	6,303	79.4

[1] Based on number reported for Dec. 15, 1909, or nearest representative day.

A marked distinction with respect to the degree of concentration exists between regular producing mines, quarries, and wells, on the one hand, and nonproducing properties on the other. The latter includes for the most part enterprises which are still in the development stage, as well as others which have had a product in the past but whose present operations are confined to the maintenance of the property, or to development work with a view to resuming production.

About two-thirds of all the wage earners engaged in nonproducing mining properties were employed by operators employing not exceeding 20 wage earners each. The largest enterprises in this class were represented by 12 operators employing from 101 to 500 wage earners each. On the other hand, more than one-half of all wage earners engaged in producing mines were employed by operators with a working force of 500 men or over.

Table 21 shows the distribution of operators according to the number of wage earners for producing and nonproducing properties separately.

Table 21

WAGE EARNERS[1] PER OPERATOR.	PRODUCING ENTERPRISES.				NONPRODUCING ENTERPRISES.			
	Operators.		Wage earners.[1]		Operators.		Wage earners.[1]	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	16,657	100.0	1,965,283	100.0	1,995	100.0	31,499	100.0
No wage earners	2,187	13.1			196	9.8		
1 to 5	6,292	37.8	14,788	1.4	1,293	64.4	3,227	10.2
6 to 20	3,837	23.0	43,963	4.0	779	39.0	7,339	23.4
21 to 50	1,973	11.8	64,327	6.0	127	6.7	3,781	17.5
51 to 100	983	5.9	71,645	6.7	28	0.8	1,921	6.1
101 to 500	1,105	6.6	242,999	22.8	12	0.8	1,921	6.9
501 to 1,000	155	0.9	118,191	10.3				
Over 1,000	125	0.8	518,360	48.7				

[1] Based on number reported for Dec. 15, 1909, or nearest representative day.

Classification according to value of products.—Table 22 gives, for all mining industries and for the most important industries separately, a classification of the operators according to value of products per operator, and shows, for each class, the number of operators and the total value of products.

Table 22

INDUSTRY AND VALUE OF PRODUCTS PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Value of products.	
	Number.	Per cent distribution.	Amount.	Per cent distribution.
All industries	19,915	100.0	$1,238,410,322	100.0
Less than $5,000	11,384	57.2	18,518,939	1.5
$5,000 to $20,000	4,276	21.5	43,997,158	3.6
$20,000 to $100,000	2,840	14.3	128,896,227	10.4
$100,000 to $1,000,000	1,221	6.1	335,247,982	27.1
$1,000,000 and over	194	0.8	712,277,016	57.5
Coal	3,695	100.0	577,142,535	100.0
Less than $5,000	1,175	31.8	2,921,529	0.6
$5,000 to $20,000	919	24.9	9,557,398	1.6
$20,000 to $100,000	885	23.9	44,005,693	7.6
$100,000 to $1,000,000	631	17.1	172,161,675	29.8
$1,000,000 and over	85	2.3	348,496,450	60.4
Anthracite coal	192	100.0	149,189,471	100.0
Less than $5,000	58	30.7	95,226	0.1
$5,000 to $20,000	24	12.5	268,261	0.2
$20,000 to $100,000	38	19.8	2,153,644	1.4
$100,000 to $1,000,000	54	28.1	21,021,422	14.1
$1,000,000 and over	17	8.9	125,622,918	84.2
Bituminous coal	3,503	100.0	427,962,464	100.0
Less than $5,000	1,116	31.9	2,826,003	0.6
$5,000 to $20,000	895	25.5	9,289,027	2.2
$20,000 to $100,000	847	24.2	41,852,049	9.8
$100,000 to $1,000,000	577	16.5	151,141,253	35.3
$1,000,000 and over	68	1.9	222,873,532	52.1
Petroleum and natural gas	7,793	100.0	185,416,684	100.0
Less than $5,000	5,449	69.9	8,890,708	4.8
$5,000 to $20,000	1,506	19.3	14,812,243	8.0
$20,000 to $100,000	626	8.2	26,924,025	14.5
$100,000 to $1,000,000	184	2.4	49,198,036	26.5
$1,000,000 and over	19	0.2	85,591,672	46.2
Copper	161	100.0	134,316,987	100.0
Less than $5,000	68	42.2	83,082	0.1
$5,000 to $20,000	32	20.0	337,175	0.2
$20,000 to $100,000	18	11.2	725,467	0.5
$100,000 to $1,000,000	22	13.7	8,708,533	6.5
$1,000,000 and over	21	13.0	124,462,730	92.7

INDUSTRY AND VALUE OF PRODUCTS PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Value of products.	
	Number.	Per cent distribution.	Amount.	Per cent distribution.
Iron	176	100.0	$106,947,082	100.0
Less than $5,000	42	23.9	54,063	0.1
$5,000 to $20,000	34	19.3	363,050	0.3
$20,000 to $100,000	47	26.7	2,416,815	2.3
$100,000 to $1,000,000	38	21.6	14,023,823	13.1
$1,000,000 and over	15	8.5	90,089,331	84.2
Precious metals	2,282	100.0	94,123,180	100.0
Less than $5,000	1,571	68.8	1,775,238	1.9
$5,000 to $20,000	347	15.2	3,599,027	3.8
$20,000 to $100,000	208	9.1	9,226,301	9.8
$100,000 to $1,000,000	140	6.2	38,704,156	41.1
$1,000,000 and over	16	0.7	40,818,458	43.4
Lead and zinc	977	100.0	31,363,094	100.0
Less than $5,000	531	54.4	901,363	2.9
$5,000 to $20,000	231	23.6	2,407,108	7.7
$20,000 to $100,000	173	17.7	7,776,942	24.8
$100,000 to $1,000,000	38	3.9	7,339,203	23.4
$1,000,000 and over	4	0.4	12,938,478	41.2
Limestone	1,665	100.0	29,832,492	100.0
Less than $5,000	940	56.5	1,370,469	4.6
$5,000 to $20,000	401	24.1	4,177,822	14.0
$20,000 to $100,000	270	16.2	12,318,129	41.3
$100,000 to $1,000,000	54	3.2	11,966,072	40.1
Granite	707	100.0	18,997,976	100.0
Less than $5,000	276	39.0	585,023	3.1
$5,000 to $20,000	235	33.2	2,590,945	13.6
$20,000 to $100,000	149	21.1	6,415,992	33.8
$100,000 to $1,000,000	47	6.7	9,406,016	49.5
Phosphate rock	51	100.0	10,781,192	100.0
Less than $5,000	9	17.6	21,132	0.2
$5,000 to $20,000	11	21.6	106,680	1.0
$20,000 to $100,000	8	15.7	445,855	4.1
$100,000 and over	23	45.1	10,207,525	94.7

The relative importance of small-scale and large-scale production in mining can be seen from the fact that the 11,384 operators reporting products valued at less than $5,000, though they constituted 57.2 per cent of the total number of operators, reported only 1.5 per cent of the total value of products, while the 164 operators reporting products valued at more than $1,000,000, though they formed less than 1 per cent of the whole number of operators, reported 57.5 per cent of the total value of products. The degree of concentration varies in the different industries, operators reporting products of more than $1,000,000 in value contributing 92.7 per cent, as measured by value, of the copper product, 84.2 per cent of the iron ore, 84.2 per cent of the anthracite coal, 52.1 per cent of the bituminous coal, 46.2 per cent of the petroleum and natural gas, 43.4 per cent of the precious metals, and 41.2 per cent of the lead and zinc. In the phosphate rock industry which reported a total value of products of $10,781,192 there was one operator whose products were valued at more than $1,000,000. The other mining industries do not show so high a degree of concentration.

EXPENSES.

The census does not purport to furnish figures which can be used for determining profits or exact cost of production.

Table 23 shows, however, for 1909, in percentages, the distribution of expenses in producing enterprises by classes for all mining industries combined and for the most important industries separately. This table shows that for all industries combined 61.4 per cent of the total expenses were incurred for services—that is, salaries and wages—23.8 per cent for supplies, materials, and fuel, 6.1 per cent for royalties and rent of mines, and 8.7 per cent for all other purposes.

Table 23

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED FOR PRODUCING ENTERPRISES.[1]				
	Salaries.	Wages.	Supplies, materials, and fuel.	Royalties and rent of mines.	Miscellaneous.
All industries	5.1	56.3	23.8	6.1	8.7
Coal:					
Anthracite	3.2	66.3	19.2	5.7	5.6
Bituminous	5.5	74.3	12.1	3.1	5.0
Petroleum and natural gas	5.3	20.0	37.8	15.7	21.2
Copper	3.4	45.9	44.2	1.7	4.8
Iron	4.6	40.1	23.3	20.5	11.5
Precious metals	5.6	44.4	37.7	1.7	10.6
Lead and zinc	4.1	43.2	37.6	9.4	5.7
Limestone	7.2	59.0	22.0	2.0	9.7
Granite	6.6	68.6	16.6	1.2	7.0
Phosphate rock	8.0	43.3	30.4	4.7	13.6

[1] For absolute figures on which these percentages are based, see Table 7, p. 334.

As would be expected, the proportions vary considerably in the different industries. The largest percentage for services (79.8) is shown for the bituminous branch of the coal-mining industry, the smallest percentage (25.3) being reported for the petroleum and natural gas industry. The proportion for supplies, materials, and fuel varies from 44.2 per cent for the copper industry to 12.1 per cent for bituminous coal mining; the proportion for royalties and rent of mines, from 20.5 per cent for iron mining to 1.2 per cent for granite quarrying; and the proportion for miscellaneous expenses, from 21.2 per cent for the petroleum and natural gas industry to 4.8 per cent for the copper industry.

POWER.

Table 24 shows, for all mining industries and for the most important industries separately, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current), and their total horsepower. It also shows separately the number and horsepower of electric motors which were run by current generated by the same establishment.

Table 24

PRODUCING ENTERPRISES: 1909

INDUSTRY.	Primary power										Electric motors run by current generated by other power using establishments	
	Owned								Electric motors operated by purchased current			
	Aggregate horsepower.	Total horsepower.	Steam engines.		Gas or gasoline engines.		Water wheels.					
			Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.
All industries	**4,608,253**	**4,402,554**	**79,573**	**3,726,552**	**23,296**	**518,542**	**906**	**97,460**	**4,779**	**205,699**	**34,203**	**402,721**
Coal	1,904,154	1,877,450	19,315	1,674,601	374	2,101	9	348	472	25,704	16,969	373,398
Anthracite	676,753	675,343	7,569	674,571	25	772			32	1,430	1,132	46,998
Bituminous	1,227,401	1,202,107	11,726	1,199,430	349	2,329	9	348	440	24,274	9,717	320,398
Petroleum and natural gas	1,221,969	1,221,969	26,908	746,658	21,762	475,151			6	160	424	8,960
Copper	276,494	224,178	690	202,849	71	2,325	15	19,004	879	52,295	636	15,438
Iron	346,534	342,069	3,163	326,733	27	2,651	30	12,665	68	4,405	2,225	52,255
Precious metals	228,244	144,302	1,974	84,953	409	9,696	704	49,833	2,142	83,742	374	26,694
Lead and zinc	119,559	197,276	2,158	94,220	214	12,907	3	89	89	3,283	362	12,948
Limestone	125,624	115,573	2,166	112,399	119	2,911	9	272	208	9,431	179	5,291
Granite	61,695	54,213	1,346	52,549	65	1,142	6	322	139	5,992	57	1,949
Phosphate rock	50,526	50,426	549	46,817	32	3,669			1	100	229	21,398

Of the total primary power used in mining, 4,402 554 horsepower, or 95.5 per cent, was owned by the mine operators, only 205,699 horsepower, all of which was electric power, being rented. The total amount of electric power used, including that generated at the mines, aggregated 699,420 horsepower. Nearly three-fourths of the total rented power was reported from the Mountain and Pacific states, where the abundance of water power and the scarcity of coal makes the transmission of electric power profitable. The ownership of water power by mine operators was insignificant, except in the production of the precious metals, which is mainly confined to the group of states above mentioned. Of the horsepower generated by gas or gasoline engines, 91.6 per cent was utilized in the petroleum and natural gas industry.

ENTERPRISES OPERATED BY GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS.

Enterprises operated by governmental and eleemosynary institutions differ in their organization and methods of management from other enterprises. They were therefore omitted from the general tabulation and are presented as a separate group. Table 25 presents the principal statistics for these enterprises grouped according to character of institution.

As shown by the following table, there were 132 of these institutions in operation in the United States in 1909. The total capital invested by them was reported as $2,003,876 and the total number of persons employed by them was 1,639, while the total value of products was reported as $1,642,801. Of the total number of enterprises reported, 125 were operated by governmental institutions. The statistics for these institutions do not include under persons employed the inmates whose services were utilized in the operation of the enterprises. They do include, however, salaried employees engaged in supervisory work and the guards or other prison officials who were employed in guarding the inmates while at work. The total value of the products reported by the penal institutions was $701,229, which represented 43 per cent of the total product reported by the entire number of enterprises operated by some governmental body.

The seven eleemosynary institutions employed 14 wage earners and reported products valued at $10,257.

Table 26 presents the same statistics as are shown in Table 25, grouped according to industry.

Table 25

	GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS: 1909			
	Total.	Governmental.		Eleemosynary.
		Penal.	Operated by hired labor.	
Number of enterprises	132	30	95	7
Number of mines and quarries	124	35	120	3
Number of wells	107	1	95	11
Capital	$2,003,876	$674,985	$1,107,291	$22,600
Expenses of operation and development during year	$907,401	$254,913	$649,584	$3,502
Superintendents and managers	$70,357	$39,767	$30,590	.....
Clerks and other subordinate salaried employees	$124,916	$109,203	$14,813	.....
Wage earners	$122,735	$1,050	$119,413	$2,292
Miscellaneous:				
Supplies	$216,457	$46,092	$170,074	$381
Fuel and rent of power	$54,914	$30,085	$24,640	$189
Royalties and rent of mines	$24,341	$2,768	$21,273	$300
Taxes	$950	$503	$447	.....
Contract work	$52,946	$2,711	$49,995	$240
Rent of offices and other sundry expenses	$40,965	$22,576	$18,289	$100
Value of products	$1,642,801	$701,229	$931,315	$10,257
Persons engaged in industry	1,639	199	1,426	14
Superintendents and managers	106	53	53	.....
Clerks and other subordinate salaried employees	172	144	28	.....
Wage earners, Dec. 15, 1909, or nearest representative day	1,361	2	1,345	14
Engineers, firemen, mechanics, etc.	104	1	102	1
Miners, miners' helpers, quarrymen, and stonecutters	960	1	946	13
All other employees [1]	297	.....	297	.....

	GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS: 1909			
	Total.	Governmental.		Eleemosynary.
		Penal.	Operated by hired labor.	
Number of wage earners employed on the 15th day of each month:				
January	393	2	383	8
February	390	2	377	11
March	493	2	479	12
April	715	2	703	10
May	839	2	830	7
June	893	2	883	8
July	876	2	867	7
August	1,020	2	1,008	10
September	1,071	2	1,067	2
October	997	2	986	9
November	763	2	751	10
December	447	2	439	6
Land controlled, acres	26,214	16,669	7,325	2,220
Owned	19,911	16,605	1,435	1,871
Held under lease	6,303	64	5,890	349
Mineral and oil land	21,667	14,136	6,570	961
Owned	15,658	14,072	680	906
Held under lease	6,009	64	5,890	55
Timber land	280	260	20	.....
Other land	4,267	2,273	735	1,259
Primary horsepower	5,744	2,320	3,381	43

[1] Includes 2 boys under 16 years of age.

Table 26

GOVERNMENTAL AND ELEEMOSYNARY INSTITUTIONS: 1909

INDUSTRY.	Number of enterprises.	Number of mines, quarries, and wells.	Persons engaged in mining industries Dec. 15, 1909.			Primary horsepower.	Capital.	Expenses of operation and development.				Value of products.
			Total.	Salaried employees.	Wage earners.			Total.	Salaries and wages. [1]	Supplies and materials.	Miscellaneous.	
All industries	**132**	.....	**1,639**	**278**	**1,361**	**5,744**	**$2,003,876**	**$907,401**	**$517,128**	**$271,371**	**$118,902**	**$1,642,801**
Coal, bituminous	3	3	95	95	.....	1,285	680,652	128,394	95,073	33,321	.....	401,403
Natural gas	14	107	58	17	41	636	668,150	178,177	28,248	132,327	17,602	335,618
Limestone	71	107	892	121	771	2,452	351,185	334,358	227,888	50,868	55,602	525,657
Traprock	21	20	351	21	330	962	171,690	145,837	97,236	21,146	27,455	208,190
Granite	16	17	169	20	149	299	118,849	101,787	53,116	31,691	16,980	148,814
Sandstone	8	8	74	4	70	110	13,350	18,848	15,567	2,018	1,263	23,119

As shown by the above table, most of the enterprises included in this group were engaged in the operation of stone quarries, the value of the stone produced representing 55.1 per cent of the total reported by all enterprises. Substantially all of the stone produced was utilized by the governmental body in its own construction work, very little being marketed. Table 27 further classifies the data for these institutions, by states.

The most important enterprises operated by governmental institutions were in the states of Kansas and Tennessee. The total value of the products reported from the enterprises operated by these institutions in these two states amounted to $725,601, representing 44.2 per cent of the total product of all such institutions. In Kansas the principal enterprise was a bituminous coal mine operated by the state prison, which reported 61,434 tons of coal, valued at $153,609. In like manner, in Tennessee the principal enterprise was a coal mine operated by the state government, which reported 308,937 tons of coal, valued at $245,271.

Table 27

[illegible] 1909

STATE.	Number of enterprises.	Number of mines, quarries, and wells.	Persons engaged in mining industries Dec. 15, 1909: Total.	Salaried employees.	Wage earners.	Primary horsepower.	Capital.	Expenses of operation and development: Total.	Salaries and wages.	Supplies and materials.	[illegible]	Value of products.
United States	**132**	....	**1,639**	**278**	**1,361**	**5,744**	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Alabama	4	6	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Connecticut	3	3	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Illinois	7	8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indiana	4	8	10	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kansas	6	[illegible]	[illegible]	22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Kentucky	7	8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maryland	3	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Massachusetts	14	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Minnesota	4	4	[illegible]	[illegible]	72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Missouri	6	6	92	[illegible]	74	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New Jersey	3	3	21	9	12	122	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New York	10	10	125	[illegible]	120	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ohio	4	24	22	4	18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pennsylvania	12	22	74	7	67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tennessee	11	35	258	108	150	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Virginia	3	6	18	7	11	44	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wisconsin	11	11	118	5	113	272	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
All other states [1]	20	23	257	16	241	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[1] Includes Arkansas, California, Colorado, Delaware, Georgia, Idaho, Iowa, Maine, Nevada, New Hampshire, North Carolina, Oklahoma, Oregon, Rhode Island, and South Dakota.